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Therapeutic Gazette.

WHOLE SERIES, VOL. XXI. DETROIT, MICH., SEPTEMBER 15, 1897. THIRD SERIES, VOL. XIII, NO. 9.

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THE RAPIDITY OF ABSORPTION AND ELIMINATION OF SOME COMMONLY EMPLOYED DRUGS AS A GUIDE TO THEIR ADMINISTRATION.

BY H. A. HARE, M.D.,
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The knowledge of the effects of drugs upon the human or animal organism is a *sine qua non* of successful therapeutics of a rational type, and its importance is so great that any argument in support of a closer study of the action of remedies is useless. Too often, however, we study the effect of the drug upon the different organs upon which we wish it to exercise a particular influence and ignore its influence upon the organs of absorption and elimination, although the speed and manner of absorption and elimination should govern our dosage, as to size and frequency. The direct influence of the remedy as it passes through the absorbing organs and those of elimination may be great.

A study of modern medical literature re-

veals a distressing lack of attention to these points, and we find careful practitioners ordering drugs which are slowly eliminated very frequently in twenty-four hours, and drugs which are rapidly eliminated very seldom in twenty-four hours; with the result in the latter instance of practising what an eminent therapeutist has called "kangaroo therapeutics," viz., a great effect of short duration at long intervals. Thus to give dilute hydrocyanic acid three times a day for the relief of cough will produce a sedative influence of a powerful character, which will last at the most but a few minutes and leave the patient unmedicated for several hours; and the use of ammonia as a stimulant in a similar manner is equally futile. On the other hand the frequent administration of digitalis or the bromides is unnecessary, for these drugs are so slowly absorbed that the system receives a gradual dose, so to speak, and they are so slowly eliminated that if the doses are frequent the drugs simply accumulate in the body and produce an excessive effect.

All drugs cannot be arbitrarily divided into those which are slowly and those which are rapidly eliminated, but some drugs do lend themselves to such a classification, and some of those which are slow of absorption are slow of elimination. It is because drugs which are slowly eliminated are frequently given too often in twenty-four hours that the so-called "untoward effects" of many of them are developed; and in reality a large number of drugs produce a cumulative effect, although this term is usually applied to the effect of the excessive use of digitalis. The difference in the effect of digitalis when it accumulates is that some change in the position of the patient may bring on the symptoms suddenly, and therefore a greater impression is made on the mind of the physician and perhaps on the body of the patient.

The reliable information that we have as to the absorption and elimination of drugs is by no means as complete as is desirable. No part of pharmacological study is more neglected. In many instances no studies as to the elimination of important remedies have been made. In other cases the drug is so completely destroyed in the body as to prevent any estimation of its presence in the urine, as for example in the drug digitalis; and again in some instances the methods of testing for the substance in the eliminative secretion cannot be relied upon. I trust at some future time to present original studies on this point, but at present I shall only gather together for your consideration the facts already scattered through some of the literature.

Of the mineral drugs which are rapidly absorbed and eliminated we find the following:

The iodide of potassium is absorbed and eliminated so rapidly when taken by the empty stomach, even in so small a dose as three grains, that it appears in the saliva and urine in from ten to twenty-five minutes, usually in about fifteen minutes. It does not tend to accumulate in the system to any great extent. Its rapidity of total elimination is apparently not so great as its speed of total absorption, for though it soon disappears from the stomach it appears in the saliva for about thirty-six hours afterwards. These results have been reached by a number of observers, but the figures given here are my own. Soullier asserts that the iodine appears in the urine and saliva in so short a time as five minutes, and this statement is endorsed by Desprez (De l'Elimination de l'Iodine de Potassium par les Urine, 1884). Doux states that thirteen minutes usually elapses before elimination begins.

Not only is the drug speedily found in the saliva, but the largest part of the dose taken escapes within twenty-four hours. About eighty per cent. escapes in this brief period, but on the other hand the drug remains in small amounts much longer than this. Ehlers (*Annals de Dermatolog. et Syphilog.*, 1890) states that this residual quantity is slowly eliminated over a period of five days. John Marshall found that 265 grains a day could be recovered from the urine of a patient taking 360 grains a day. There are several reasons why this result is reached. First, the amount eliminated by the urine does not represent that eliminated by the saliva, and probably there is also an elimination by the bowel, so that an amount considerably over that found by Marshall really escapes from the body if the patient defecates or expectorates. On the other hand, one of the reasons why a certain portion remains uneliminated is that being eliminated in the saliva it is swallowed and reabsorbed. Then, too, it is probable that some of the iodine unites with the albumen of the tissues, forming slowly soluble albuminoid compounds of iodine, and so this quantity is delayed in the body.

It is evident, therefore, that in the use of iodide of potassium we should give it freely and frequently at first until the residual

amount has reached its limit, when smaller doses may be given and given less frequently for the purpose of maintaining the iodine influence. That is to say, the drug should be given up to the point of tolerance, whatever that may be, and then a smaller dose will be sufficient to maintain its influence by replacing the albuminoid compounds as they are slowly eliminated. On the other hand, if the iodide is being given for the purpose of eliminating some poison, as lead for example, here the dose cannot be greatly decreased because in addition to the ordinary quantity eliminated a proportion is passed out as a double soluble iodide of lead. This theoretical objection seems to find support in the fact that after the syphilographer reaches the full effect of the drug he often cuts the dose down to what he calls the "tonic dose," and so maintains the constant alterative effect without disordering the functions of the body. If he does not do this the drug accumulates and causes chronic iodine cachexia, a state which it is important to avoid in grave disease like syphilis, which depends for its relief so largely on the development of great vitality in the patient.

It is interesting to note in this connection that when we give iodide of potassium the iodine unites with the sodium in the blood and is so eliminated, whereas the potassium itself is more slowly eliminated; and as it has a depressant effect on the vital functions it cannot be ignored. This is illustrated in regard to another iodine compound by an experiment of Issersohn, who gave iodide of lithium hypodermically and recovered all the iodine in the first twenty-four hours, but not all the lithium for forty hours. The facts in regard to the iodide of sodium are such as to strongly commend it as a substitute in medicine for the potassium salt. I have already shown in one paper, as have many others before me, that potassium is a powerful depressant, while sodium is not. Again, when iodide of potassium is taken internally it is decomposed and iodide of sodium is found. The sodium salt, therefore, possesses great advantages, as it contains practically as much iodine as the potassium salt.

Iodine itself is properly used less than the iodides because it is irritant and more slowly absorbed, and seems to produce more irritation in its elimination than iodine derived from the salts named.

Bromide of potassium has been studied very thoroughly as to its absorption and elimination. It is absorbed rapidly and exceedingly slowly eliminated. Thus Rabuteau asserts that five minutes after it is taken it begins to be eliminated, and in ten minutes its presence is most manifest. Amory found one-half of the drug eliminated in twenty-four hours and one-third in the next twenty-four; but the important fact for us to remember, from a therapeutic point of view, is that the balance of this drug is perhaps more slowly eliminated than any of the common remedies, for Bill (*American Journal of the Medical Sciences*, July, 1868) found it in the urine two weeks after the drug had been stopped, and Rabuteau found it one month after. The same rule which was stated as governing the use of the iodides holds here, namely, that after the drug is once manifesting its full effect smaller doses will maintain its effects, and this is the method in which those neurologists who use it most generally employ it, namely, full doses for one week and then small doses only large enough to preserve the effects. Probably few general practitioners follow this custom.

It is manifest, therefore, from what I have said that the administration of either iodides or bromides in frequent small doses possesses no advantages and is apt to disorder the digestion and overload the organism with the drug. They should be given twice or thrice a day in full dose rather than frequently in small doses.

The rapidity of absorption and elimination of mercury depends to a very great extent on the variety of it which is given. The drug in some forms is so soluble, in others so insoluble, that very great delay in its elimination must often ensue because it is slowly absorbed. It will be futile in this brief paper to discuss the form in which mercury is absorbed. It is usually taught in France that the theory of Miahl is correct; this is that the mercurial preparations are transformed in the stomach and intestine into the bichloride, which in turn unites with the sodium chloride in the blood and circulates as a double chloride of mercury and sodium. In Germany it is taught that it forms an albuminate of mercury and so circulates (Henoch's theory), or that it forms a chloro-albuminate (Voit's theory). All theories as to the form of its absorption are open to grave criticism. As to the elimination of mercury, it is known to escape by every avenue of exit from the body—the urine, feces, sweat, tears, milk, and saliva. After a single dose the drug begins to be eliminated in about two hours according to Byasson, and is entirely gotten rid of

in twenty-four hours. If, however, the doses are persisted in it gradually accumulates in the body and is so slowly eliminated as to remain for almost indefinite periods of time, and is found deposited in all the organs. In other words, the doses of mercury ordinarily given are always large enough to produce cumulative effects. Thus while Balzer and Klumpke agree with Byasson as to the rapidity of elimination of a single dose, they find from an experimental study that the amount of mercury which can be eliminated by the kidneys for many weeks when the body is saturated with the drug is only one-sixteenth of a grain a day. It is evident therefore that after a full mercurial effect is produced it is well to decrease, as do most syphilographers, the dose of mercury and only give enough to maintain the effect. It is also evident that their plan of using iodide of potassium every now and again to aid in the elimination of the residual mercury is advisable.

Antipyrin is rapidly absorbed from the stomach in a space of from fifteen minutes to half an hour, and begins to appear in the urine at this time; but Reihlen asserts that its elimination continues for from thirty-three to fifty-six hours after the last dose. It therefore should not be given in too frequent doses. In regard to acetanilid we have the assertion of Kumagawa that it is absorbed in half an hour and eliminated completely in twenty-four hours, so that it is not as prolonged in its effects as is antipyrin.

Atropine and belladonna are, on the other hand, absorbed with extraordinary rapidity and equally rapidly eliminated in the urine. Harley asserts that elimination is complete in two hours. This drug may therefore be wisely given frequently. Aconite is also rapidly absorbed and destroyed by oxidation, so that its effects do not last for any length of time.

Arsenious acid is absorbed fairly rapidly, but eliminated very slowly indeed, chiefly by the kidneys and the sweat. It begins only after the lapse of fourteen hours and continues for sixty hours, and it is thought by some that the development of an arsenical rash is an indication that elimination through the skin is beginning. This drug ought therefore to be given at long intervals rather than in many doses each day.

I have called attention to these facts in regard to the absorption and elimination of drugs because I do not think that enough attention is given to this important subject when drugs are given.

*TWO HUNDRED CASES OF SPEECH DEFECTS AT THE PHILADELPHIA POLYCLINIC HOSPITAL.**

By G. Hudson Makuen, M.D.,
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It has long been a source of surprise to me that the function of speech, which plays such an important part in the history of our civilization and in the physical and mental development of man, should receive so little attention at the hands of the medical profession. In comparison with the advancement which we have made in our studies of the other leading faculties of the human organism, we are many years behind the times with the faculty of speech.

We no longer look to the enterprising optician to correct our errors of refraction, but we still depend upon his twin brother—the quack stutter-doctor with his tricks and secret mechanical contrivances—to correct our defects of speech. This is a fact greatly to our discredit, for there are no sufferers who require the careful, conscientious treatment of the skilled physician more than those who think with a stammering brain and speak with a stammering tongue. It is with this fact in view, and with the hope of placing the whole subject on a more scientifically workable basis, that I have undertaken its study.

In the somewhat less than a half-year that my clinic has been in operation, nearly two hundred cases have presented themselves for treatment. Of these two hundred cases, one hundred and forty were stammerers, and the remaining sixty represented all the other varieties of vocal and speech defects of which I have any knowledge, and one or two varieties which have never been reported.

You will readily see that to do justice to my subject would require more time than I have at my disposal, and so I have concluded to read only that part of my paper which refers to stammering, and to draw some conclusions from my one hundred and forty cases with reference to the nature of the affection, its etiology, and its treatment.

Ninety-five per cent. of my patients were males, and they ranged all the way from six to fifty-three years of age. Thirty-two per cent. are reported to have stammered from

*Paper read before the Medical Society of the State of Pennsylvania, May 19, 1897.

the very inception of their speech development; fifty-two per cent. began between the ages of three and ten years; two began at eleven years, one at twelve, one at fourteen, and two at fifteen years of age.

About seventeen per cent. claimed some improvement with increasing years, while twenty-five per cent. were getting worse; thirty per cent. had associated with persons similarly afflicted; and thirty-two per cent. had relatives who stammered.

Seventeen per cent. ascribed the origin of their trouble to the voluntary imitation of others; fifteen per cent. to having received a fright; eight per cent. to an injury; and six per cent. to having been ill-used at home.

Whooping-cough, measles, scarlet fever, diphtheria, and smallpox have all figured as supposedly causative factors, although these diseases have not been especially prevalent among them. Consumption had made inroads into the families of twenty-five per cent. of my cases; and this is an interesting fact when we consider that stammering is always accompanied by marked irregularities in the respiratory function.

There was a family history of insanity in three of my cases; and no imbecility or idiocy. The usual reply to my question, "Bright or dull?" was "Very bright;" but this was true only in certain lines. Some of the faculties appear abnormally acute, while others are below the average. This is especially true of those who have stammered for a long time. Not only is there an impairment of the mind, but there is a physical impairment as well; and few of them claim to be in good general health. "Weak and nervous" is a favorite expression with them; and many attribute their whole trouble to this condition.

Of special interest to me has been the study of the objective conditions or appearances of these patients. They present a peculiar physiognomy which is almost pathognomonic. Their dejected facial expression is probably due largely to the great mental depression which many of them experience on account of their defect; but the general contour of the head and face is a part of their natural inheritance; and it is certainly suggestive of the degenerate type.

The thoracic development is fairly good in most of these cases, but there is a total lack of voluntary respiratory control. It is by no means uncommon to find one with a well developed chest who is unable to make more than an inch or an inch and a half difference between the girth of forced expiration and that of forced inspiration.

Now as to the condition of the organs of speech as seen by direct inspection and by means of the rhinoscope and the laryngoscope: First, the tongue. I have had only one case of tongue-tie where it was necessary to clip the frænum; but there were four cases in which the anterior fibers of the genio-hyoglossus muscle were too short, and in which division of these fibers seemed to be indicated in order to give a free motion to the tip of the tongue. My method of doing this operation will be found fully described and illustrated in the *Journal of International Clinics*, vol. i, 7th series, April, 1897. In several cases the tongue was found to be hypertrophied; there was too much of it, and it seemed to be in its own way. I have not thought it necessary to attempt an operation to remedy this condition, but as early as 1841 Dieffenbach removed a wedge-shaped piece by means of a horizontal section at the base of the tongue for the relief of stammering; and the operation might be justifiable where the tongue is very long and thick.

The uvula has presented some interesting anomalies. There were eight bifid uvulas; and there were many cases in which it seemed to turn at right angles upon itself and point horizontally in various directions. In one case the uvula was divided throughout its entire length, and there was a large congenital perforation in the anterior palatal fold. Another case had a long epiglottis which appeared above the base of the tongue, and a portion of which I removed with the electric knife.

Hypertrophied faucial and pharyngeal tonsils and intranasal lesions have been frequently met with, and a general catarrhal condition of the nose and throat is the rule. That this catarrhal condition is due in part, at least, to the unnatural use of the organs of speech we must admit, but its chief causes are undoubtedly intranasal pressure and hypertrophied pharyngeal and faucial tonsils.

Having considered the history of these cases and the objective symptoms and conditions, we are in a position to draw some conclusions as to the nature and cause of stammering.

In the first place, it is an affliction which is confined largely to the male sex — only five per cent. of my cases being female. It comes on during adolescence — the great majority beginning during the early part of the forma-

tive speech period. It is not self-limited and few get well or even improve without special treatment. Heredity is an important factor. Nearly one-third of my cases claimed to have had relatives similarly affected. This would indicate that the tendency or predisposition to stammer is inherited. Imitation, voluntary or involuntary, is a fruitful cause of this trouble. Twenty-four of my cases attributed the origin of their condition to the voluntary imitation of others. A severe nervous shock, the result of fright or injury, is also a common cause. One boy stammered ever since his head was ducked in a tub of cold water; another since he lost an eye in an accident; and another since he was frightened by a large sewer rat. The above observations or facts would seem to prove that stammering is due directly to some disturbance in the cortical speech mechanism, or in the nerve track uniting the cortical with the two peripheral speech mechanisms, viz., the vocal and the oral or articulating mechanism.

Now as to the treatment of stammering. In the first place we must study our case. No two are exactly alike. There are great differences in the varieties and outward manifestations of this affection, as well as in the cause. We must determine, if possible, just where the trouble exists. Is it in the cortical speech mechanism, the vocal mechanism, or in the oral mechanism, or in the nerve tracks which unite these mechanisms? Having reached a conclusion on this point, we must then seek for all possible causes. To be sure we may not find the original cause, for it may have long since ceased to exist and only the stammer remain, but anything which may interfere with the free and harmonious action of the three mechanisms which I have mentioned should be removed. Intranasal lesions, and all oral or pharyngeal and laryngeal irregularities, should be carefully corrected, and the general health of the patient put in the best possible condition. When all this is done the after-treatment is comparatively easy, and the prognosis for a permanent cure is most favorable.

The treatment consists in a systematic course of training which shall be of such a nature as to thoroughly break up certain faulty mental and muscular processes, and to substitute for them certain other natural and physiological processes which shall be governed entirely by an intelligent consciousness.

There is no trick about it. I have no specific to offer. There is no short-cut, easy method. The treatment for stammering, like all other treatment, must be along the lines of sound physiological and psychological principles. The patient must be taught the exact sounds of the language, and if the speech muscles will not perform their functions properly, they must be trained into right action by the frequent repetition of appropriate exercises. It will not take long to prove to the patient that he can say some things without stammering sometimes; then he must be shown that he can say anything without stammering sometimes; then by frequent repetitions, and by encouragement or suggestion if you please, he must be brought to the point where he knows that he can say anything without stammering at all times and under all circumstances. Then and then only may a cure be said to have been effected.

NEURASTHENIA OR NEURO-STHENIA: WHICH? AND AN EFFICIENT TREATMENT.

By Beverley O. Kinnear, M.D.

The symptoms which denote to the practised eye of the educated physician a case of neurasthenia are essentially those which indicate derangement of the nerve centers, of the cerebro-spinal centers, and also of the sympathetic system. There is a mingling of strength and weakness, an evidence of excessive nervous action, accompanied by constipation, frequently by digestive inactivity, and muscular weakness. There is an active condition of the brain, yet a disability for concentrated mental labor. There are cold extremities, demonstrating a deficient blood-supply and therefore a deficiency in tissue oxygenation and nutrition; but at the same time the motor apparatus of the legs in particular is often seen to be more excitable than in health, as shown by muscular twitchings and jerkings, especially at night. There are attacks of neuralgia, and tendencies to internal congestions.

Many such patients suffer from congestive headaches and sleeplessness; or they may sleep very soundly, but they are always found to waken unrefreshed. They sometimes feel as if they "must escape from their body," so uncomfortable, restless, and excitable are they. They may even have a good appetite, but their food does not appear to nourish them. The respiration is feeble, or shallow; they take cold easily, either in the head, throat, lungs, or muscles,

and are exceedingly sensitive to all temperature changes. They are subject to innumerable uncomfortable sensations—both mental and bodily—and in nine cases out of ten have so concentrated their mentality upon their feelings and sensations that they are a misery to themselves as well as to those who are brought in contact with them.

Hypersensation—both mental and physical—and malnutrition may be said to cover the expression of this disease.

By malnutrition can be understood an *excess* of nutrition, and therefore an excess of function in some parts of the body; as well as a deficiency in the circulation and oxygenation in other parts, illustrating diminished functional power.

It appears to the writer that this is precisely the condition in the so-called neurasthenia.

As this state may be reasonably demonstrated to be due to irregular action of nerve centers—if this be true—then the most efficient treatment for this disease is to restore the normal action and function in the nerve centers, and to supply to all organs and tissues their proper modicum of oxygen.

Let us then (so to speak) dissect the action of the nervous system in the train of symptoms presented, and observe also whether these symptoms be due to increased or to diminished function in central nerve cells.

We must for a moment go back to the causes, or some of the chief ones, which induce this disease. In general terms, any course of action or form of suffering which exhausts the nutritive nerve centers may originate it. Long-continued anxiety, grief, or fear may induce an attack. Unwearied labors of body and mind cause it. Venereal and other excesses are a fruitful source of the condition. The general rush of the age in which we live, in pleasure as well as business, and in the pursuit of knowledge in multitudinous paths, all have a tendency to induce overstrain and exhaustion in the nutritive central nervous system. Heredity is a prominent factor. Accidents, shocks, and the tuberculous diathesis give rise to the disease.

The nerve centers which regulate the nutrition of all organs and all tissues have become so overworked that the balance between these vaso-dilator nerves which expand the arteries, and the sympathetic ganglia—the chief function of which is now acknowledged to be to contract them—has been destroyed. The result is that the sympathetics function abnormally and contract the arteries in the extremities, causing cool or cold hands, feet, arms, and legs, according to the degree of exhaustion in the vaso-dilator nerve centers.

Here, then, we have neurasthenia in one set of nerve centers, in those which dilate the arterioles, and thus supply oxygen and nutrition to the whole physical frame; while in the sympathetics, or those nerve centers which contract the arteries, we behold a condition of neuro-sthenia or hypernervous action; and it is the writer's opinion that it is this excessive action of the sympathetics which by expelling the blood from the long muscles and extremities not only forces the mass of the blood into the internal organs and cerebro-spinal nervous system, giving rise to all forms of congestions, as well as the general hyperesthesia, but this closed condition of the arterioles in all extreme and superficial regions, particularly in the abdomen and lower body, prevents the access to these parts of their normal supply of oxygen and food.

By the contraction spoken of the blood is forced in excessive quantity into the brain, so that during day and night the gray matter of this most important organ is kept at work, and the result is loss of mental power and weariness, losses of memory, of will power, of concentration, and of consecutive and well balanced thought. An exhausted brain can only signal weak commands, and a poorly nourished muscular system can only reply in a feeble manner. And yet the blood having been driven also in excess into the spinal cord, we have excitement of that organ, as demonstrated in all the forms of exalted sensation, the muscular twitching, and the general restlessness, the whole condition expressing a desire to be up and doing, but a physical and mental incapacity to meet the wishes of the patient. We have at the same time a more or less congested state of the liver, lungs, pancreas, and the whole upper body; therefore an inefficient action of the digestive organs and a partial loss of function in the air cells, so that they are unable to absorb the normal amount of air necessary to the healthful supply of oxygen to the blood, and through the circulation to all tissues.

Goodhart, in his "Common Neuroses," page 40, says: "Children are often brought in for an opinion because they are so thin. They are always eating, yet never do any credit to their victuals, etc. But these children are always twitchy, half-choreic, or excitable, and they are for the most part of a

nervous temperament." Added to the above symptoms we ourselves have noted for many years that such children have invariably cool or cold feet and legs, as well as cold upper extremities, demonstrating thereby a feeble circulation in the muscular apparatus of the greater portion of the body.

Francis X. Dercum, in his text-book on "Nervous Diseases," 1895, declares of neurasthenia: "It is extremely probable that brain, cord, and peripheral nervous system all suffer." This statement from so recent an authority voices our own conclusions without presenting the cause of the suffering referred to.

This we believe to be a powerful neurosthenic action of the sympathetic ganglia, causing a contraction of the general peripheral circulation, depriving all the parts involved of their normal amount of oxygen and nutrition, and giving rise to a general hyperemia of the brain and the spinal cord, internal organs, and upper body; this last condition interfering with nutrition and digestion by the exhaustion of the brain and spinal cord from overstimulation, as well as from the congested state of both excreting and secreting organs, demonstrating *neurasthenia* in the cerebro-spinal system, as opposed to *neuro-sthenia* in the sympathetic ganglia. Therefore it appears to the writer that neurasthenia is a general hyperemia of the brain, spinal cord, and sympathetic ganglia, but an exhaustion of the cerebro-spinal system, in contradistinction to excessive force displayed by the sympathetic ganglia, in the peripheral contraction of the arteries.

Whether this exposition be the true one or not, we all recognize the fact that in neurasthenia we have presented to us patients with a poor circulation, with a tendency to internal congestions, and with a feebly acting brain and muscular system.

If the foregoing be correct, then the main objects to be attained are: to restore a good circulation to the extremities, thus relieving the brain, spinal cord, and internal organs of their congestion, and at the same time to supply every tissue of the body with its normal amount of oxygen.

Before outlining the treatment which we have found most efficient in this disease, let us turn for a few moments to those methods which have been and are adopted to-day.

Rest, seclusion, feeding, and entire restraint from sympathizing friends and relatives was introduced by Dr. Weir Mitchell of Philadelphia. This treatment has had successes, but also a large number of failures. Massage and electricity have been of service, but in severe cases are not curative. Strychnine has been tried and failed. The various sedatives, such as the bromides, sulphonal, and trional, are temporary quieting agents. Out-of-door exercise within the point of fatigue is beneficial. Change of scene and air to those who can afford it have often worked wonders, but require time and expenditure. Various preparations of iron, but especially the saccharated carbonate, and arsenic also, have been found useful; all of these treatments have been found serviceable and sometimes curative.

Our object is to show that this disease is due to hyperaction in one portion of the nervous apparatus and enfeebled action in the muscular and nutritive nerve centers, the latter being due in the first place to one or more of the originating causes set forth, and secondly to undue stimulation by the forcing of the blood in excess into the already weakened cerebro-spinal system; and also to advocate a treatment which has been proven to be effective in a large number of cases by the writer, and which has seemed to him truly scientific, because it will conquer quickly and safely the conditions of nervous derangement presented in neurasthenia.

How can normal distribution of the blood be accomplished? And how can we supply oxygen to the exhausted nerve centers and to all the organs and tissues of the body? By three methods: The internal administration of oxygen by inhalation; by the intelligent use of cold over the spine; and by those forms of electricity which are known to excite the nutritive processes.

During the past sixteen years we have made more than eight thousand personal applications of cold to the spine, and in a variety of diseases. We know therefore by long-continued clinical observation what results may be obtained by its use. The very first effect of the spinal ice-bag is to dilate the arterioles all over the body, if applied from the fourth cervical to the last lumbar vertebra. But in nearly all cases of neurasthenia there is cerebral hyperemia, consequently the bags should only be applied from the fourth dorsal to the last lumbar vertebra. By this method the arteries may be dilated in the lower body, and through this dilatation the excess of blood is drawn from the brain and internal organs, as well as expelled from the spinal centers locally, over which the cold application is placed. We have carried out this

treatment without drugs many times, with excellent and permanent results.

Added to these applications, however, we have found that the proper inhalation of a pure form of oxygen, when properly combined, will ensure a more rapid progress toward recovery than by cold over the spine alone. The formula which has been found most efficacious, and which has been most widely commended by all authorities upon the use of oxygen, is composed of two parts of oxygen, one of nitrous monoxide, and one per cent. of ozone. This is the standard of the London Oxygen Hospital, and it can be obtained fresh from the leading druggists in the country.

It is most important to use oxygen for therapeutical purposes thus combined and prepared, because pure oxygen is so dense in its specific gravity that the arterioles will not absorb it unless combined with a gas of lighter specific gravity; and ozone is required to keep it fresh.

The fact that the capillaries will not absorb pure oxygen alone has been demonstrated by confining small animals in hermetically sealed tanks containing an atmosphere of pure oxygen. They rapidly die of asphyxiation.

Physicians too, as a rule, are not aware that commercial oxygen is never free from deleterious products, and should never be inhaled; but this is true, and cannot be too strongly impressed upon the profession. The inhalation of oxygen has been noted by many observers to increase the appetite and materially aid the general nutrition, and by its action upon the pneumogastric and phrenic nerve centers it expands the lungs and reenergizes the diaphragm into vigorous action; and this deepened respiration will sometimes continue for hours after its inhalation. The general glow which follows its use, and the sense of increased vigor which is a sequel to the inhalations, we believe can only be explained as due to an increase in the activity of all nutritive metabolic processes.

Do not make too long administrations of oxygen in neurasthenia, or any chronic disease. Two or three inhalations when the stomach is empty, three times a day — morning, afternoon, and evening—are sufficient in the twenty-four hours. The lungs must first be emptied by strong expiration, then place the tube in the mouth, and while the nostrils are closed draw the oxygen by long and deep inspiration into the lungs; and after retaining the inhalation as long as possible, let it slowly escape from the nose.

There should be an interval of two minutes between the inhalations. Pure oxygen should only be used for local application externally, to stimulate sluggish granulations, etc.

In all forms of disease where there is difficult respiration, and the cyanotic condition, the inhalation of oxygen is the remedy *par excellence*. The cold applications should be made over the spine for half an hour three times a day if the patient does not find them unpleasant, but if so, morning and evening; or even once a day will suffice.

Static electricity may be combined with the use of the ice-bag and oxygen inhalation, if found necessary.

We finish our paper with a reply to the query contained in the title:

Neurasthenia appears to us to be an excessive action in one set of nerve centers, united with an abnormally weak action in the cerebro-spinal or vaso-dilator centers; therefore a mixed condition of neurasthenia and neurosthenia.

202 W. 106TH ST., NEW YORK.

THE COMPARATIVE MERITS OF RESORTS IN NEW MEXICO, COLORADO, AND ARIZONA.

BY S. E. SOLLY, M.D.

We all have heard the saying of Mrs. Malaprop, "Comparisons are odorous;" and I trust I may not be forced to exclaim with Hamlet's uncle, "My offense is rank; it stinks to heaven," but rather may rest with a quiet conscience, having presented you with comparisons redolent of reason, and fragrant with facts.

Of the resorts to be considered, the most northern (Estes Park) is parallel with Philadelphia, while the most southern (El Paso) is on a line with Atlanta, Georgia. El Paso lies in Texas, just beyond the border of New Mexico, but climatically it belongs to New Mexico rather than to Texas, and is therefore so considered in this paper. It is obviously impossible to make mention of all the places in this section of the country which are used as health-resorts. Reference is made only to those which are most characteristic, or to those of which the meteorological data are fullest. In the appended tables I have accorded the substance of all the weather reports obtainable; yet there is much desirable information that at the present time is not forthcoming, and therefore these studies are so far incomplete. The statements made

will be found to be based upon the facts given in the tables and upon the references quoted.

Before proceeding to discuss the differences between these resorts it will, perhaps, be well first to consider in what respects they are similar. Owing to their great distance from the ocean and their relation to the main mountain ranges of the continent, the climate of these States is everywhere extremely dry, with brilliant sunlight and with unusually high solar and relatively, and indeed on the high ground actually, low shade temperatures; the nights are cool and the days warm, quite beyond anything experienced in any other climate at present available for invalids.

The annual means range as follows: Relative humidity from fifty per cent. to forty-two per cent.; absolute humidity between 1.79 grains and 3.25 grains per cubic foot of air; rainfall from seven to sixteen inches; the number of cloudy days from thirty to fifty-seven; and the temperature from 40° at Estes Park to 72° at Yuma. The elevations vary from 7200 feet at Estes Park to 140 feet at Yuma. The latitude extends from 40° to 33°. The annual wind movement ranges from 6663 miles to 3379 miles.

When we come to consider the differences between the climates of these resorts, upon looking at the appended tables it will be noticed that the chief points of distinction are in temperature, wind movement, latitude, and elevation. A comparison between the temperatures of places of similar elevations shows that latitude does not exert as great an influence as altitude. And in comparing resorts of different elevations it will be seen that altitude is all-important in modifying temperature and, in a less degree, wind-velocity. For these reasons it would appear that the best method of arranging these resorts for purpose of comparison is in the order of their altitude.

As this country lies more or less under the lee of the Rockies it is necessarily dry. In Colorado the bulk of the precipitation occurs in the last two months of the spring and of the summer, while in New Mexico and in Arizona the spring is much drier and the rainfall, which is usually less in amount, occurs both in the winter and in the summer. In all these resorts the autumn weather is about equally dry and bright, and is of a pleasant temperature. In all of them the winter weather is good, being however somewhat more severe as the more northern latitudes are approached. The springs are drier, pleasanter, and less stormy in the southern half of New Mexico and of Arizona than in Colorado and in northern New Mexico.

In Colorado and in northern New Mexico the summer weather in places above 5000 feet is cool and moderately dry, and very pleasant, healthy weather for the visitor and invalid. In southern New Mexico and Arizona, except at elevations of 7000 feet and

ANNUAL AVERAGES.

	Elevation.	Latitude.	Soil.	Normal air-pressure.	Temperature.			Humidity.				Number of cloudy days.	Mean monthly wind movement.
					Annual.	January.	July.	Relative humidity.	Absolute humidity.	Dew-point.	Rainfall.		
Estes Park	7200	40	Gravel.	..	40	24	60	..	..	..	16.31	..	..
Santa Fé	7000	35.41	Gravel.	23.26	49	28	70	48	1.79	30	14.6	48	4681
Colorado Springs	6000	38.51	Gravel.	24.03	47	26	69	50	1.84	29	14.4	57	6666
Silver City	5800	32.46	Gravel.	24.26	54	37	72	50	2.47	36	14.58	37	2476
Glenwood Springs	5700	..	Adobe.	..	48	22	78	..	..	..	15.96	..	..
Boulder	5300	40	Sand.	..	47	..	..	..	..	..	19.21	..	..
Denver	5300	39.45	Sand and adobe.	24.73	50	27	73	50	2.04	31	14.4	57	4980
Cañon City	5300	38.30	Adobe.	..	53	32	74	..	..	..	11.38	..	..
Prescott	5300	34.33	Sand and adobe.	24.76	53	34	74	51	2.31	35	16	51	4898
Pueblo	4700	38.18	Sand and adobe.	25.27	52	29	76	49	2.14	31	12	53	5438
Oracle	4500	32.50	Gravel	..	63	45	80	22†	..	26†	17.7	..	..
Las Cruces	3800	32.17	Adobe.	26.11	58	39	77	65†	..	47†	7	20	4948
El Paso	3700	31.47	Adobe.	26.21	64	44	83	48	3.15	40	9	39	3941
Eddy	3200	31*	Adobe.	..	63	42	82	..	..	..	11	..	..
Tucson	2400	32.14	Sand and gravel.	27.45	69	50	88	42	3.25	44	12	57	3735†
Phœnix	1100	33.28	Adobe.	28.77	69	49	90	45	3.5	42	7	52†	3379
Yuma	140	32.44	Sand.	29.92	72	53	92	46	3.19	43	2.9	15	4317
Cairo, Egypt	90	30.31	Sand.	..	72	54	86	61	5.42	58	.53	..	..

*Approximate. †1896.

SPRING SEASONAL AVERAGES.

	Seasonal temperature.	Night temperature	Relative humidity.	Absolute humidity.	Rainfall.	Number of cloudy days.	Hourly wind movement.
Estes Park	..	..	..	..	6.19	..	..
Santa Fé	48	35	52	1.37	23.	11	7.5
Colorado Springs	49	32	46	1.81	4.5	20	11 8
Silver City	53	..	..	..	..	..	8.8
Glenwood Springs	27	..	..	..	4.9	..	..
Boulder	49	..	..	..	8	..	..
Denver	48	33	49	1.88	5.8	20	7.4
Cañon City	52	..	..	..	4.2	..	..
Prescott	51	36	44	1.86	3.1	7	8.4
Pueblo	51	34	45	41.9	3.6	20	8.8
Oracle	60	48	..	..	1 5	..	..
Las Cruces	58	..	..	..	.4	18*	..
El Paso	64	50	36	2.36	.6	6	6.7
Eddy	64	..	..	..	.4	..	..
Tucson	62	47	37	2.27	1.2	5	5.3
Phœnix	67	..	33	2.23	.3	7	5.6
Yuma	70	54	43	3.43	.3	4	6.7
Cairo, Egypt	74	..	52	4.94	.13	..	..

SUMMER SEASONAL AVERAGES.

	Seasonal temperature.	Night temperature	Relative humidity.	Absolute humidity.	Rainfall.	Number of cloudy days.	Hourly wind movement.
Estes Park	57	..	..	..	4 25	..	..
Santa Fé	64	55	43	2.82	6.6	12	6.4
Colorado Springs	67	51	50	3.62	7.2	11	8
Silver City	72	..	..	..	..	..	..
Glenwood Springs	69	..	..	..	3.8	..	..
Boulder	65	..	..	..	7.7	..	..
Denver	70	55	46	3.67	4.5	12	6.7
Cañon City	72	..	..	..	4.2	..	..
Prescott	70	56	48	3 83	6.1	9	7.2
Pueblo	73	56	44	3.87	5	10	7.5
Oracle	78	68	..	..	6.5	..	..
Las Cruces	76	..	..	..	4.7	21*	..
El Paso	83	68	45	5 40	4.1	6	5.2
Eddy	86	..	..	..	7.1	..	..
Tucson	82	69	40	4.65	5.4	12	5.1
Phœnix	87	..	41	5.55	2.7	10	4.8
Yuma	89	73	43	6.18	.5	3	6.6
Cairo, Egypt	86	..	51	6.84	..	..	..

AUTUMN SEASONAL AVERAGES.

	Seasonal temperature	Night temperature.	Relative humidity.	Absolute humidity.	Rainfall.	Number of cloudy days.	Hourly wind movement.
Estes Park	43	..	..	..	2.31	..	..
Santa Fé	56	39	56	2.81	3.5	8	8.7
Colorado Springs	48	34	54	2.05	2	13	8.2
Silver City	55	..	..	..	..	..	..
Glenwood Springs	47	..	..	..	4.2	..	..
Boulder	49	..	..	..	2†	..	..
Denver	50	38	50	2.04	2.3	12	6.4
Cañon City	53	..	..	..	1.6	..	..
Prescott	53	37	49	2.21	2.7	4	5.9
Pueblo	52	37	50	2.19	1.7	13	6
Oracle	65	54	..	..	5.6	..	..
Las Cruces	59	..	..	..	1.5	12*	..
El Paso	62	50	56	3.44	3	7	4.6
Eddy	65	..	..	..	2.6	..	..
Tucson	68	51	43	3.22	2.4	4	5.1
Phœnix	69	..	56	4.4	1.7	7	4.4
Yuma	73	57	46	4.04	.7	3	5.1
Cairo, Egypt	73	..	70	6.32	.3	..	..

WINTER SEASONAL AVERAGES.

	Seasonal temperature.	Night temperature	Relative humidity	Absolute humidity.	Rainfall.	Number of cloudy days.	Hourly wind movement.
Estes Park	24	..	44 7	..	3.56	13	..
Santa Fé	30	20	52	1 03	2.3	13	6.8
Colorado Springs	29	17	50	94	.7	13	8.4
Silver City	37	..	49	1.25	1	..	..
Glenwood Springs	27	..	..	4.9	..	..	..
Boulder	24	..	..	..	1.51	13	..
Denver	30	10	54	1.06	1.3	12.1	7.3
Cañon City	34	..	..	..	1.8	..	..
Prescott	35	27	57	1.4	5	8	6.3
Pueblo	31	15	57	1.16	1.4	11	7
Oracle	45.2	37	..	..	4.1	..	..
Las Cruces	43	..	43	1.37	1.17	11*	..
El Paso	46	33	52	1.84	1.3	9	5.4
Eddy	40	..	..	..	1	12	..
Tucson	49	35	48	1.89	3	11	5
Phœnix	51	..	53	2.2	2.6	11	4.4
Yuma	56	43	47	2 36	1.6	6	6.1
Cairo, Egypt	58	..	70	3.57	..	..	..

more, the excessive dry heat is very trying to all but the robust, as there are only a few invalids whose health is improved by these extreme conditions. A glance at the column showing the night temperatures emphasizes the difficulties to the invalid of the summer climate in the lower and southern resorts of this region. The dust, which is generally abundant and irritating on the lower ground of New Mexico and Arizona at all seasons, is especially so in the summer.

In most of the reports of the health-resorts the character of the soil is not detailed, but inquiry reveals the fact that in many of the resorts, especially on the lower ground of Arizona, the soil is mainly adobe, the towns being built in the river valleys, so that a great deal of fine alkaline dust arises from the ground in hot, dry weather, while rain or snow will lie upon the surface in cups and hollows for many days longer than it does upon the sandy or gravelly slopes or benches which are generally found situated above the river bottoms; and it is very obvious that the local conditions of these resorts for the most part are very inferior. The majority of the town sites have been chosen for convenience to water rather than for reasons of

*1896.

†Total rainfall for Boulder is taken from one year only; September is missing. The wind and humidity of Phœnix is based on one year only.

health, and the difference in the hygiene of a town situated upon a hillside or mesa to one in a river bottom is perfectly astonishing, so that it may be said the environments of many of these resorts are very unworthy of their climates.

What has been said about the town sites is equally true of the accommodations. Most of the towns have not been built for, nor do they cater to, the delicate or fastidious invalid. The lack of interest and amusement or occupation is also a serious drawback in many of these places. And in considering the powerful influence of mind over body, it is most true of the majority of invalids, especially of the consumptive, that

> Absence of occupation is not rest,
> And a mind that's empty is a mind distressed.

Before proceeding to give the specific information about the different resorts, it is perhaps well to discuss briefly what is known or believed to be true of the general effects upon health or disease of the chief factors of climate. And as phthisis is the most common and most important of the diseases for the amelioration of which these climates are sought, we shall consider the matter from this point of view. As a broad general statement it may be said that consumption is most prevalent in proportion to the temperature and the humidity of the climate: (1) in damp, cold climates; (2) damp, hot climates; (3) dry, hot climates; and (4) dry, cold climates; while in curative effects it is true in the reverse order. This indicates in a general way that dryness is of benefit, and humidity obnoxious to phthisis, while the relative effects of heat and cold depend upon the degree of dampness. Heat in a damp climate, except when tropical, is less harmful than cold, while heat in a dry climate is less beneficial than cold—that is, always to the vital resistance, and generally to the disease.

"Apparently humidity of the air, apart from other factors, does not in itself produce phthisis. The comparative immunity from consumption among the men of the British navy contrasted with those of the army, and the rarity of the disease in many islands, such as the Faroe, the Shetlands, the Hebrides, and Iceland, show this. The influence of these climates and of sea-voyages on the disease when developed and active has, however, not been shown by the evidence of others nor by my own observation to be advantageous, removals from the sea being generally of most benefit. Where advantage has been derived from a sea climate it would appear probable that it was owing to the great purity of the air or the elimination of unsanitary conditions and hurtful occupations.

"Dryness of the air, on the contrary, is known to be of positive benefit to the consumptive. The excellent results obtained from desert air (apart from great altitudes, which we shall consider later) are too well known to quote at length.

"In crediting dryness of air *per se* with a beneficial influence upon phthisis, we must not forget that some of the credit, at least, belongs to other necessary accompanying factors of a dry atmosphere, namely, more powerful sunlight and heat, less depressing cloudy weather, cooler nights and shade, and a higher electric tension of the body. What is also of prime importance is the greater opportunity for exercising and resting in the open air, and the free access of fresh air to the house by day and by night while the patient is indoors."*

Range of Temperature.—Hirsch writes that "severe and sudden changes of temperature have no more determining influences *per se* than has the absolute height of the temperature." He shows further, however, that variability, if accompanied by dryness, is usually beneficial; but variability with dampness is positively harmful. These statements are confirmed by the evidence of many other authorities.

Wind.—"Consumption is neither more nor less prevalent in a place simply because it is windy, nor are consumptives as a class made better or worse by this element alone. It is beneficial or detrimental according to its temperature and humidity and the patient's condition—that is, according to his need of stimulation or sedation.

"Cold, moist wind sometimes soothes, but more often depresses, the patient, while it aggravates catarrhal affections if they be of a relaxed type.

"Cold, dry wind simply stimulates or else irritates the patient, and hence it improves relaxed catarrhal conditions, but makes those which are inflammatory worse.

"Warm, moist wind lessens irritability, and is either soothing or depressing.

"Warm, dry wind acts as a tonic or increases irritability."†

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*"Handbook of Medical Climatology," by S. E. Solly, M.D.

†*Ibid.*

Sunlight. — Sunlight promotes healthy growth, increases the oxidation of tissue, and is a pleasant stimulant to the nervous system. Sun-heat is the best and cheapest of germicides, and is valuable as provocative of open windows and an open-air life. When moderate, it is an agreeable sedative; but when excessive, with dry air, it is very irritating to the nervous system, interferes with the proper action of the liver and kidneys, and prevents the taking of beneficial exercise.

While the dryness of the air makes the sensible temperature lower, yet when the temperature is absolutely high it much increases its irritating and so weakening effects, though at the same time it may be markedly beneficial in drying up ulcerative processes in lung tissues. Excessive heat with dampness is not irritating but far more depressing, and accelerates tuberculous processes.

Barometric Pressure. — Hirsch has shown most conclusively that decreased barometric pressure tends to confer more or less immunity from phthisis. The marked decrease which is present in all high climates has been demonstrated by Egger and many other observers to have a remarkable effect upon anemia, by increasing the amount and quality of the red blood-corpuscles and hemoglobin; that these blood changes are brought about, not by the quantities of dryness, sunlight, or other climatic factors in high or other climates, but by the diminished barometric pressure, was proved conclusively by the classic experiment of Regnard, who, at sea-level, kept a rabbit in a bell glass under diminished air-pressure, equivalent to the atmosphere at 6000 feet elevation, for a month. When the rabbit was removed it was found that the same blood changes had taken place as occurred in rabbits transferred from sea-level to a climate at 6000 feet elevation.

The rapid and remarkable improvement in the local and general conditions coincident with these blood changes in consumptives transported from sea-level to high ground of 3000 feet and upwards has been demonstrated by numerous careful observers in Europe and in North and South America. As far as we at present know, the only successful means of combating chronic tuberculosis is by improving the resisting power of the blood; it therefore follows that that climatic factor which most fully and directly brings this result about is the one to be especially regarded in choosing a climate for the cure of consumption. There are, however, other considerations which enter into the question of the appropriate climate for a given case of consumption: these are mainly the effects upon the heart, nervous system, and the mucous membranes of the respiratory tract; for the climate may be ideal in directly opposing the development of the disease-germs, yet if it mechanically embarrasses the efficient action of the heart or overexcites or depresses the nervous system, or by its stimulation aggravates and increases the irritability of the pneumonic or catarrhal process, or on the other hand by its extreme sedation and therefore depressing effects aggravates them, it may be unsuitable for a given case.

As confirmatory of the general effect of climate in the treatment of tuberculosis as demonstrated by the physiological experiments just spoken of, I refer you to the analysis of some 8000 cases of phthisis treated by climate given in my work upon Climatology. They were all the reports that a careful search through the literature of the subject revealed to me. The number being so large, it may be fair to assume that the law of averages justifies a belief in the general truth of the statistical results attained. The reports are by a number of eminent observers from all parts of the world, and were readily grouped under the following heads: Under the title of home climates are placed those which remained in the same climates in which the disease developed; sea climates (ocean, island, coast — ocean covers only those who took sea-voyages); lowland climates (lowland, sanitariums, desert); highland. The last covers only reports of cases treated in climates above 5000 feet altitude.

The statistics show an almost steady rise in the percentage of improvement from the ocean to the altitudes. The percentage of improvement among those who took sea-voyages was 54 per cent.; in lowland climates, 57 per cent.; in lowland desert climates, 65 per cent.; while in altitudes the improvement runs up to 77 per cent. From this we learn two things: that as a rule the consumptive improves the further he is removed from the sea influence, as shown in the contrast of the percentage of fifty-four and sixty-five; and further, the benefit of altitude over lowlands, even in desert life, is shown by the difference between sixty-five and seventy-seven. Therefore, while the desert air of Arizona will cure more cases of consumption than the sea air of the coast, say of southern California, yet it will not cure as large a proportion as will the mountain air of the highlands.

In deciding what cases are exceptions to these general rules, it will be well roughly to classify cases of phthisis as follows: First, those in whom the tendency to the spread of tuberculosis is the most prominent symptom, which may be called, for convenience, the tuberculous cases. Second, those consumptives in whom there is an especial tendency towards inflammatory processes, and those persons are usually of the erethic temperament; this group may be termed the pneumonic. The third division is those in whom there are catarrhal tendencies of a relaxed or low inflammatory type. Such cases are usually anemic and have phlegmatic temperaments. This group may be termed the catarrhal. It is, of course, understood that all are tuberculous, and most have some tendency towards inflammation or catarrh, or both.

As in the tuberculous cases the important matter is to destroy the germs and remove the anemia, it follows that these cases should be placed on high ground where the air is not only dry and sunny but also cool and stimulating. When the patient is able to exercise, the cooler air, such as found during the winter in most resorts of Colorado, is most desirable, and the cure progresses more certainly and rapidly. The cold acts more beneficially than heat upon the usually depressed nervous system of this class of cases, and also induces greater appetite and increased vitality. When the patients are too feeble to exercise, it is sometimes best to begin their cure in a warmer and lower climate, and later to transfer them to the higher and cooler regions.

With respect to the effect of altitude upon the heart, the tendency in the young towards dilatation from a weak muscle is not a contraindication for the use of a high climate, if the patient is kept extremely quiet for the first few weeks after his arrival. But in persons past middle life, and those in whom the dilatation is accompanied by damaged valves, high climates are dangerous. Valvular disease with good compensation is not necessarily a bar. But time does not permit the discussion of this subject in further detail.

With respect to the effects of altitude and cool air upon nervous irritability, it is necessary to distinguish between the irritability of weakness and the inherent irritability, such as is exhibited in the erethic type. The former are benefited, the latter injured, by altitude and coldness. A desert air benefits, though in a lesser degree, the first class of cases, and it aggravates the condition of the second class by the excess of heat and dryness. Old age and atheromatous conditions are unsuitable to high and to cold climates.

The extent of lung involved plays an important part in determining the elevation most beneficial to the patient. If marked dyspnea, due to the extent of the lung involvement and not to the anemia or weak cardiac muscle, is present at sea-level, a case with this symptom must be kept on low ground. This particularly applies to obstruction in the left lung.

With respect to the pneumonic cases, the altitude must be moderate, and also the dryness; while in the catarrhal cases the altitude should be a medium one because of the susceptibility to cold-catching from the sudden changes, and also because a greater warmth of air is needed than for the purely tuberculous cases; but dryness is of the first importance.

To turn from this brief consideration of pathological conditions to a short discussion of the different effects of the regions under consideration, it may be said that in the winter climate of such places as Yuma at 140 feet elevation we find the benefits of dryness and heat. At Phœnix (1100 feet) similar conditions prevail, modified as regards local humidity by the irrigation which produces a light morning and evening fog. The heat, however, is not as excessive, and the accommodations and general resources are much better.

At Tucson, 2400 feet up, we still find much of the influence of the desert air with some indications of the benefits derived from elevation. Here the accommodations, while not so good as those at Phœnix, are rapidly improving. El Paso and Las Cruces, 3700 and 3800 feet respectively, are near together and very similar in climate. El Paso is more dusty, and has some of the resources of a city. It is probably more subject to windstorms than Las Cruces, which is better sheltered and cleaner, but less interesting.

Oracle, 4500 feet, forty miles stage-ride from Tucson, is removed from the dust and turmoil of the cities, and is said to be pretty and attractive, with two fair hotels, a pleasant country to ride and drive over, but few interests.

Prescott, 5300 feet, has many points of climate in its favor, but has practically no resources for invalids.

Silver City, 5800 feet, has a remarkably

fine climate, but indifferent accommodations and few interests except mining.

Santa Fé stands at 7000 feet elevation, has a magnificent climate, and is an interesting town with fair accommodations, but unsanitary conditions.

Las Vegas, 6500 feet, has a good winter climate, but the accommodations are inferior.

The Las Vegas Hot Springs, 7000 feet, are in a cañon. There is a fine hotel, which, however, is very seldom open. The place has a good climate, but is monotonous and uninteresting, and the springs are almost negative in their therapeutic qualities.

Cañon City, 5300 feet, is a warm, sheltered, pleasant winter resort. It is a quiet but agreeable little town, and the accommodations are very fair.

Denver, 5300 feet, is colder and more exposed, but probably is somewhat drier and has a better soil than Cañon City. It has the resources and objections necessarily associated with a handsome and progressive city of 150,000 inhabitants.

Colorado Springs, 6000 feet, has about the same winter temperature as Denver, is slightly drier, has less snow, but rather more wind. It was laid out as a health-resort upon a mesa near to, but sufficiently removed from, the shadow of Pike's Peak. It is a handsome residential town without manufactories, and with first-class resources of all kinds, and beautiful suburbs.

Estes Park is a beautiful mountain valley. It is much used by invalids with great benefit during the summer months, and a few have wintered there, finding it at that time monotonous but healthful, and the weather much milder than was to be expected. The accommodations are fair. There are other parks, such as Manitou Park, that are pleasant and healthful for summer residence, similar in climate and in character, but of which no reports are forthcoming. Manitou Park has especially good and attractive accommodations and resources.

In comparing all these resorts, it may be said that Colorado Springs possesses the most stimulating, and Yuma the least stimulating, climate.

The winter and fall climate of all these places is good, and is more bracing the greater the altitude, and the higher the latitude.

The spring weather in New Mexico and in Arizona is, as a rule, much better than that in Colorado.

The summers on the high ground of Colorado are cooler and pleasanter, and they are as dry as those of like elevations in New Mexico and in Arizona, where the resorts of moderately low elevation are impossible, on account of excessive heat.

There is generally more wind in the more northerly and elevated resorts; the dust, however, is more objectionable in the more southerly and lower resorts, because the soil is usually adobe (clay) and alkaline, and so rises readily in the form of a light irritating powder, while on the high ground the soil is more apt to be gravel or granitic detritus.

THE BENEFICIAL EFFECT OF THE CLIMATE OF SUMMERVILLE, S. C., ON AFFECTIONS OF THE THROAT AND LUNGS.

By William Hutson Prioleaus, A.M., M.D.,
Summerville, S. C.

To every physician, as the winter season approaches, the question of providing a proper sanitarium for his patients, and one which shall be eminently suitable to their needs, causes much care and anxiety. It is a primary requisite that the climatic conditions of the place resorted to be favorable for the purpose of bringing about the desired results.

Excellence of climate, of course, should be attended by a certain degree of comfort and pleasure, as being conducive to convalescence. Frequently resorts which have obtained a reputation by no means merited are recommended to people as the ideal places where their health may be entirely restored. This is usually the case where companies organized for land improvement have employed all kinds of methods, whether of a questionable nature or not, to exhibit to the world the supposed virtues and advantages of certain places, thereby enabling them (the companies) to secure private gain.

As a practising physician and one naturally interested in promoting and securing the public health, I deem it my bounden duty to set forth as far as lies within my power the unexcelled advantages of climate possessed by Summerville, S. C. I take great pleasure in doing this, cognizant of the fact that as a resort for people in any way troubled with diseases of a pulmonary kind, and also as a place in which to pass the winter months, Summerville to-day stands unsurpassed, though its rivals are numerous. I sincerely trust that this article will meet the hearty approval of many persons interested

in the selection of such a resort and be the means of inducing many to spend the winters in this ideal spot.

In Hare's "System of Practical Therapeutics," vol. iv (just published), page 67, Solly, "On the value of climate in tuberculosis," says: "It is found that, other conditions being equal, consumption is most prevalent in climates in proportion to the temperature and humidity as follows: First come damp cold climates; second, damp hot climates; third, dry hot climates; fourth, dry cold climates; and in promoting recovery from consumption, as a broad statement the reverse order holds good. Thus in a general way it may be said that dampness is harmful to the consumptive, and dryness beneficial."

Again, on page 70, Solly regrets that no results in tuberculosis have been reported from Southern inland places.

It shall be my purpose to give a short account of Summerville, to record so far as I am able the health-giving qualities of its climate, and to mention those classes of cases which derive benefit from spending one or more winters here.

Summerville is situated in the heart of a primeval pine forest, on a sandy ridge, about twenty-two miles from Charleston, S. C. In winter the climate is delightful, the air cool and bracing, and fragrant with the sweet odor of the pine. The town is near enough to the sea coast to cause the atmosphere to lose the aridity of a sandy plain; at the same time sufficiently distant to be free from all dampness. Unlike other places, the local laws prohibit the cutting down and destruction of pine trees. Transgression of any of these laws is always attended with a heavy penalty. The motto of Summerville—"*Sacra pinus esto*"—is strictly observed by its citizens. Because of this Summerville presents a unique appearance, with its pines growing in the middle of the streets, on the sidewalks, in the gardens, and in fact everywhere,—for where Nature has placed them, there man in his wisdom has allowed them to remain. Here is the long-leaf pine, whose balsamic odor is like life to the poor invalid, and whose tremendous height shields his dwelling-place from the cold wintry blasts. Truly we have an ideal spot for the invalid—pure air, delicious water, sandy soil, and a forest of pines. Hardly ten years ago, at the International Congress of Physicians in Paris, Summerville was spoken of as one of two places for the sufferer from lung troubles to go to. Again, in 1887, Denison in a paper on "The Preferable Climate in Phthisis," delivered before the Ninth International Medical Congress at Washington, D. C., insisted on "purity, rarefaction, dryness, coolness, with gravelly or porous soil," all of which Summerville possesses to an extraordinary degree.

The average maximum and minimum temperature for sixteen years was respectively 71.6° and 58.9°. Thus, according to Solly and Denison, Summerville with its cool dry climate must be admirably adapted to the needs and requirements of consumptives.

Year by year the number of people who come here is increasing, and the dread of the natives is that too many will discover the health-giving quality of their climate. There is no sanatorium established in the town, but two first-class hotels and many private boarding-houses furnish ample accommodations for visitors.

Summerville's climate cannot bring back the dead to life, neither can it restore to health one in the last stages of consumption; but to sufferers from incipient phthisis, bronchitis, asthma, or the grip, it offers untold advantages. The cool bracing air, filled with ozone and the odors of the pine, acts like magic on mucous membranes and restores them to a normal healthful condition. Summerville is in the center of the "Sunny South," and there are few days when one cannot go into the open air and remain there with benefit to his health. Invalids will find the climate most beneficial from October to May, for during that time there is bright sunny weather and the atmospheric changes are seldom so sudden as to cause any serious anxiety or discomfort.

Besides being a resort for invalids, Summerville's many natural and historic attractions make it a sweet retreat for tourists, and its quietude a healthful resting-place for the nervous and those suffering from insomnia. Many families winter here year after year, for no other reason than to escape the cold of the North and West.

No statistics of cures or beneficial effects to consumptives are available; in my own experience I can recall case after case where patients who have come here either in the first or second stages have improved greatly, but unfortunately I can also mention many sad instances of consumptives beyond human aid being sent here only to be told that they have come too late—and must return at once to their homes.

Man's inhumanity to man
Makes countless thousands mourn.

This can be applied to physicians who advise patients in the last stages of this dread disease to leave their families and friends to die among strangers. However, I shall not feel that I have written in vain should only one of the many who suffer gain health and happiness from the piny air of Summerville.

TAKA-DIASTASE AS A NEW DIGESTIVE AGENT.

By F. Robert Boyd, A.M., M.D., St. Louis, Mo.

Chemical manufacturing companies have become so numerous, their literature and samples so plentiful, and their efforts so persistent to foist them upon the medical profession, by the aid of whose influence, in giving them endorsement, they hope to evolve a demand for the same, that the members of the profession have in many instances grown tired, and while they may out of courtesy treat these agents kindly, yet for various reasons they must ignore both their stacks of reprints and their samples. These manufactured products have become so numerous that no physician can afford to give them his time and attention. In every State we find numbers of great manufacturing plants devoted to these various chemical products, each one struggling for the recognition of the medical profession, and to attempt to read all their literature simply means to read nothing else.

We are all creatures of habit, and liable to become more or less extreme in both thought and action, and to pass one means that we pass all; and I think there are few of us who give ourselves up to the candid, thoughtful perusal of any of this literature thrown upon our tables with samples. I think, in fact I know, that the results would in the majority of cases prove fruitless if we did, and thus we excuse ourselves from this task. How much we may lose by not being able or not having time to go over it, and select and appropriate the best of it, we may never know. I am inclined to believe, however, that the really valuable and meritorious of this vast product will in some way command our notice, and under the law of the survival of the fittest sooner or later become recognized.

The idea I am here trying to impress was recently brought to my own mind with such force as to cause me to reflect seriously upon this question, and it has been of such great interest and benefit that I hope I shall be able to secure the attention of other physicians. I believe it is over a year since I remember seeing the term "Taka-Diastase" for the first time, and since that both samples and reports of cases treated with it have been brought to my attention without my becoming interested in it sufficiently to induce me to prescribe it. I have for the past twelve years been paying special attention to diseases of the stomach and intestines, and have felt that the usually prescribed course for functional difficulties along the digestive tract was about as near perfection as it could be made. The past twenty years has been a history of persistent attempt, with failure, to procure an efficient diastatic ferment. Some of the most eminent chemists of this country and Europe have from time to time set up claims for different inventions, which have not in a single instance proved more valuable than any other pancreatic ferment, and with the exception of a few instances—in malt productions which have manifested a weak diastatic power—all of them have depended upon a pancreatic reaction for their results, and in the hands of the profession they have fallen far short of the claims set up for them, and the hope of both doctor and patient.

I think I am not amiss in stating that the skepticism of the profession in regard to all of the digestive ferments has largely grown out of the fact that neither pepsin nor pancreatin, when introduced into a stomach in which undigested and insoluble starch products have set up an irritation through unnatural fermentation, can render much assistance in giving that stomach or intestine physiological rest. The mistake almost always made is in concluding that the cause of the pain and general disturbance of the function is due to undigested proteids which can be broken up and rendered assimilable by pepsin; but pepsin will do but little if any good. Then the physician, on the theory that either the pepsin is inert, or the presence of fats retards its action, exhibits pancreatin, trypsin, or some other intestinal digestive ferment without proper diastatic power, and again fails; and so his patient goes from one to another, only to meet with disappointment from year to year. I believe that there are many physicians all over this country who have had just such an experience as I here portray, and if I may point out to them a nearer, easier road out of this wilderness than the old beaten path they have been for years pursuing, I shall feel this effort has not been in vain.

My attention was attracted toward Taka-Diastase in a practical way during the last

session of the Missouri State Medical Association, not by any discussion of it by the members of that Association, but by Mr. Takamine himself, who, in the exhibit-room, was conducting a series of experiments with his product, Taka-Diastase, upon thick solutions of boiled starch. I immediately noticed the wonderful facility with which a few drops of the Liquid Taka-Diastase would convert it into a soluble dextrin, only requiring about five minutes to complete the process. The fact that I had on my hands at this time four cases of stomach trouble which were giving me much anxiety made me take a greater interest, I presume, than I otherwise would have done. I had the good fortune to make the acquaintance of this distinguished Japanese chemist, who I soon learned had some valuable knowledge of the function of digestion not made clear in the physiological text-books: for instance, the statement that sixty-five or seventy per cent. of all cases of indigestion are due to undigested starch products, which, escaping solution in the mouth, pass on to the stomach, and not being soluble with the albumens, after a time become local irritants like any other foreign substance.

If this statement be true, it explains why the administration of pepsin and pancreatin so often fails in cases of acute and chronic indigestion. Pepsin under an acid reaction can only attack proteid substances, converting them into peptones, and the pancreatin in an alkaline medium can exert only a very limited influence over starchy substances; hence those starches which escape solution in the ptyalin must remain insoluble, and like other organic substances in the presence of heat and moisture must ferment, bringing on the numerous train of symptoms incident to such action.

Mr. Takamine put into my hands a sufficient quantity of Taka-Diastase to give it a fair trial, and I herewith submit the following report as a result of my experience with it:

Case I.—Mrs. W., aged thirty-one; married; has five children. She is a delicate woman and has been sick a great deal, and upon becoming pregnant the sixth time called in a midwife, who punctured the membranes. Five days afterward I was called to help her out, and found her nearly exsanguinated, with a small retained placenta (she was perhaps less than three months pregnant). I carefully curetted and douched the womb, expecting her to get along. I was sent for again to relieve the intense burning in the throat and stomach, of which she complained night and day. She did not rally well, but there were no symptoms of septic poisoning present. I prescribed for her pepsin and willow-charcoal, adding also small doses of powdered nux vomica, which did little if any good. The result was I was sent for again, and there being no rise of temperature nor any symptoms of septic absorption I gave her a reliable preparation of pancreatin and moved the bowels with Epsom salts. This seemed to afford a measure of relief. Upon the afternoon of the day following, not more than an hour after I had received my sample of Taka-Diastase, I received a telephone message to come to Mrs. W.; she was growing worse every hour. I went expecting new and fearful developments, but found her suffering from the same burning, which she said was simply unendurable. I now took her off every remedy I had before prescribed and began giving her one capsule of three grains of Taka-Diastase every two hours. She had no trouble in twenty minutes after taking the first dose, and has had none since, having made a good recovery.

Case II.—A married lady, twenty-six years of age. Never pregnant. Came to me for dyspepsia. Said she had been under the care of several other good physicians without relief, until she began to be discouraged. I thought the stomach trouble arose as a reflex from some remote disease, and examined both rectum and uterine organs. I began treating her for chronic cervical endometritis, which for a time promised good results, but was soon followed by the old trouble, seemingly intensified, and do what I would I could get no benefit worth speaking of. Pepsin, pancreatin, charcoal, baptisia, glycogen, peroxide of hydrogen, the mineral acids, and stomach tonics—all proved worthless. Douching the stomach would relieve only while it was being done. The liver refused finally to respond to the more powerful cholagogues, the stools became clay-colored, and I began to fear my patient was beyond help and proposed to her that she go with me to see another physician, which she consented to do. After prescribing Taka-Diastase in Mrs. W.'s case with such good results, I sent the lady word on Friday evening to call upon me, which she did, and I began to give her Liquid Taka-Diastase, which gave her almost immediate relief. She has since that time had the intense gratification of complete relief of all stomach difficulty, and I have proceeded with her treatment successfully.

CASE III.—Mother of the preceding case, who also came to me for stomach trouble. She is sixty years of age, large and robust; has always worked hard, raised a large family, and seen many hardships. She has been sick but very little, but has for two years past suffered much with indigestion. Hemorrhoids have also developed and given her much trouble during the last year. She has gone through the usual experience of resorting to many physicians and remedies without material benefit. Her chief symptoms when she came to me were constipation, excessive dryness, and a feeling of loss of power in the lower bowels, with intense burning pain and bloating, coming on about two hours after eating. I prescribed tablets aloin, belladonna, nux vomica, and cascara sagrada, one at bedtime, and

Liquid Taka-Diastase, 1 fluidounce;
Essence pepsin, 3 fluidounces.
Mix. Sig.: One dessertspoonful after each meal.

This formula gives the Taka-Diastase time to render soluble all the starches left in the food entering the stomach before the secretion of diluted hydrochloric acid begins, which is about one hour after eating, and by the time the stomach's secretions would destroy the diastase it has accomplished its work and is out of the way. This patient has made a steady gain, which began at once.

The following case is the last, and to me the most interesting, I have had the pleasure of trying this remedy in:

CASE IV.—J. Lathrop Boyd, Esq., my own brother, forty years of age, and prominent in legal circles of the State of Michigan. He has been a sufferer from obstinate stomach trouble since childhood. When a small boy his extreme suffering used to awaken the keenest sympathy and solicitude of the whole family. Everything was done we knew of to relieve him, but with no more than very temporary results. He passed through his boyhood, schooldays, and on up to manhood and professional life with success, but always against the tide. This everlasting pain and burning seemed to hang like an incubus over him. He saw different specialists upon the stomach; none of them could determine anything more than functional difficulty as the cause of his trouble, but nothing they did cured him. Four years ago hemorrhoids developed, for which I operated upon him here in St. Louis, and for a time he seemed better, returning home greatly improved. But the arduous duties of an active law practise soon brought him down again, and for the last three years he has suffered very much indeed. Some weeks ago he again came under my personal care, at which time he was taking large quantities of soda bicarbonate and common salt in solution, which he stated was the only thing that would relieve the burning. I immediately stopped these, and for the extreme torpor of the bowels from which he had suffered so long I put him on aloin, belladonna, nux vomica, and cascara tablets, one each evening, and powdered Taka-Diastase three grains while eating three times a day, and in two hours after meals ten grains of lactopeptine.

This plan of treatment has seemed to meet the exigencies of his case in a remarkable manner, and he now promises more toward ultimate recovery than ever before.

I think the great good to be derived from Taka-Diastase will suggest itself to any thoughtful physician who has had experience with these intractable cases; its use will surely open up a better knowledge of the function of digestion.

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*THE CONSERVATIVE TREATMENT AND THERAPEUTICS OF FALLOPIAN-TUBE DISEASE.**

BY THOMAS MORE MADDEN, M.D., F.R.C.S.E., M.A.O., *Honoris Causa* Royal University; Obstetric Physician and Gynecologist Mater Misericordiæ Hospital, Dublin, etc., etc.

In dealing with cases of chronic salpingitis leading to serous or purulent effusions in the Fallopian tubes, the most common origin of which is bacterial invasion, consequent either on gonorrhea or on puerperal sepsis, there can be no special reason for departing from the generally recognized first principles of therapeutics. The primary objects of all treatment, whether surgical or medical, are I presume not merely the removal of actual disease, but also the restoration as far as possible of the structural and functional integrity of the affected parts.

Thus, for example, if the mammary gland were the seat of a purulent collection, or if, as the late Sir Spencer Wells suggested, the case before us was one of hydrocele, would it not be more advisable to open the one or tap the other than to ablate the affected gland in either case? Acting therefore on these principles I have for many years, in the first instance at least, treated by conservative

* Abstract of a paper read before the British Medical Association at Montreal.

measures such as aspiration, together with administration of mercurials and iodide of potassium, a considerable proportion of the cases of pyo- or hydrosalpinx that have come under my observation.

The successful results that may be thus obtained in many, though by no means in all, cases of this kind have been proved in my wards in the Mater Misericordiæ Hospital. Moreover, a preliminary resort to such measures, even if unsuccessful, will not interfere with the results of subsequent salpingo-oophorectomy if that be then necessitated.

The method of aspirating the tubes referred to may be here briefly described. In the first place, to permit the necessary manipulation, the patient should be put under some anesthetic and placed in the ordinary left lateral gynecological position. Then the operator introduces the index and first fingers of his left hand through the sphincter ani upwards and forwards, along the outlines of the posterior uterine wall, the fundus being pressed down by his assistant's hand over the hypogastrium. In this way the tubes and ovaries can be readily palpated, and if there be any inflammation or cystic enlargement of the former, it may be distinctly recognized as a tortuous, elongated, sausage-shaped or rounded fluctuating tumor, extending from the side of the uterus outwards to the broad ligament and backwards into Douglas's fossa. Having thus ascertained the position of the pyo- or hydrosalpinx, the next step is to carefully introduce *per vaginam* on the point of the right index finger a long, fine needle, affixed to the aspirator, up to the roof of the posterior vaginal cul-de-sac. Through this the needle is to be passed into the retrovaginal fossa, and thence guided by the operator's left index from the rectum up to the most prominent presenting part of the tubal swelling, into which it is to be plunged. The tap of the aspirator is then to be turned, so as to give exit to the contents of the dilated tube, the expulsion of which may be assisted by the steady pressure of the assistant's hand from about the hypogastrium down into the pelvic cavity, and continued until the tube is completely evacuated. After this, the cyst cavity should be washed out with an antiseptic, and the vagina should be rendered aseptic by insufflation with iodoform.

Then, no further local treatment beyond hot carbolic irrigation will generally be required, unless the tube should, as sometimes happens, again fill (though probably to a lesser extent), when the same procedure may be again repeated, until the oviduct has become reduced to its normal size. This procedure should be accompanied with the exhibition of bichloride of mercury in small and long-continued doses, as for example in the following formula:

℞ Hydrargyri bichloride, gr. i;
Tinct. cinchona comp., ʒ i.

Sig.: Ten drops well diluted after meals.

Curetting Fundal Orifice of Tubes: Treatment by Electricity.—The most common immediate cause of cystic accumulations in cases of chronic salpingitis is mechanical obstruction of the uterine orifice of the oviduct, due either to chronic follicular endometritis, flexion, or, in some instances, supra-involution of the uterus. Under such circumstances the tubal obstruction is most likely to be relieved by dilatation, followed by curetting of the diseased proliferating endometrium in the first instance, or by the rectification of the flexion in the second, and by faradization in the last named cases. The faradic current has, moreover, not only in these, but also in other forms of chronic salpingo-oophoritis, been in some instances successfully employed by Dr. Apostoli of Paris, who generally employs in such cases the faradic current of tension applied in moderate doses, and for only a few minutes at a time, for which he claims the most remarkable curative results. Another recent authority on this subject—Dr. Milne Edwards, of Edinburgh—does not believe, however, that the galvanic current is suited to cases where there is definite organic change in the ovaries, but considers that here faradism may possibly be of service.

In those graver, and somewhat more exceptional than is generally supposed, cases in which, from the extent of Fallopian disease, or from the implication in its course of adjoining structures, the urgency of the symptoms attending its progress, or other causes, it becomes impossible to deal satisfactorily or safely with such cases by the methods already referred to, there then only remains for our adoption the complete removal of the uterine appendages. I have elsewhere discussed this operation, of which I have now had sufficient actual experience to enable me to say that unless occasionally imperative and unavoidable it is by no means so universally satisfactory, either as regards the immediate or the remote condition of the patient operated on, as seems to be commonly believed. Without further discussing this topic on the present occasion, however, I shall now

merely add the question of election or necessity I regard as the cardinal point to be decided in considering the expediency of removing the uterine adnexa in the treatment of Fallopian-tube disease. In many instances unquestionably, as I have already said, that course becomes an unavoidable necessity, and is then the obvious duty of the surgeon. But it should not be forgotten, however, that in probably a no less large number of cases tubal disease may also be successfully treated by some of the less heroic but equally effectual remedial and conservative local measures to which I have now referred. These, it may be added, should be accompanied by the internal administration of bichloride of mercury as before mentioned, or by the exhibition of iodide of potash, together with inunctions of oleate of mercury with morphine over the seat of pain.

THE TREATMENT OF EPILEPSY.

The *Journal des Praticiens* of April 17, 1897, points out that there are two chief indications in the treatment of this disease: First, the arrest of the paroxysm itself, and second, the determination of the cause and its removal from the patient. In those cases where there is a warning aura which tells the patient of an oncoming attack it is recommended that some means of compression of the part in which the sensation is developed should be resorted to for the purpose of arresting the upward movement of the aura. Sometimes the forced extension or flexion of the arm or leg in which the sensation is developed will abort the attack, and in other cases compression of the carotid artery will have the same effect. It is pointed out that Charcot has counseled the application of ice to the præcardium of patients who have a cardiac aura.

It is of the greatest importance in the treatment of epileptic patients, particularly if they are children, that everything should be done for the maintenance and improvement of their general health and for the training of their mental condition. For this reason close supervision as to their food should be resorted to, and the greatest variety of substantial nourishing articles of diet should be provided. Where the child is rickety the administration of the lactophosphate of lime is often very valuable. Baths and other forms of hydrotherapy are to be recommended for the purpose of improving the tone of the general system. The urinary secretion and the action of the bowels should be carefully attended to in order that every avenue for the exit of toxines may be kept in active use; particularly is this important in those cases in which there are marked evidences of digestive disturbances with secondary intoxication. In the way of antispasmodics it is thought that camphor, ether, morphine, and belladonna are the remedies which offer us the greatest power for good in the treatment of these diseases, as they are not apt to disorder the digestion, in the opinion of the writer, to the extent that the bromides disorder it. It is also pointed out that Feré claims good results from the nitrate of silver, while Gowers relies largely upon borax and arsenic. It is also claimed that antipyrin not only tends to act as a sedative, but that it modifies the severity of the attack; and sometimes minute doses of picrotoxin are valuable. Notwithstanding all this it remains a fact that bromides are our most important remedies in the treatment of this spasmodic affection. Usually it is best to use small doses of the bromide of potassium, ammonium, and sodium rather than one salt alone. Thus we can prescribe:

℞ Bromide of potassium,
Bromide of ammonium,
Bromide of sodium, of each 6 drachms;
Water, 1 quart.

Order that four to eight teaspoonfuls of this shall be taken each day. Or the following may be given:

℞ Bromide of potassium, 3 ounces;
Nitrate of pilocarpine, 1½ grains;
Syrup of bitter orange, 1 pint;
Water, 1 pint.

A teaspoonful of this may be given four or five times a day.

LEAD POISONING WITH DEATH FROM THE USE OF HEBRA'S OINTMENT.

HAHN has recently reported to the Society of Medicine in Prague a curious case in which a child suffering from eczema of the head was treated for a long time with Hebra's ointment. General convulsions ensued, the skin became very pale, the gums presented the characteristic blue line. The patellar reflexes were exaggerated. Finally the child died. The cause of death was confirmed by an examination of the child's body and an analysis of the urine. — *L'Abeille Médicale*, March 27, 1897.

The Therapeutic Gazette

EDITED BY
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GENERAL THERAPEUTICS,
AND
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SURGICAL AND GENITO-URINARY THERAPEUTICS.

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Price to Foreign Subscribers direct (postage included), $2.50 (10 shillings). English postage-stamps received on remittances.

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Leading Articles.

THE VALUE OF PARACENTESIS PERICARDII.

Progressive physicians are recognizing more and more the fact that effusions into the various serous cavities cannot be satisfactorily removed by the administration of diuretics and purgatives. Even in chronic cases, where there is no necessity for the rapid removal of such effusions, the results rarely justify the exhausting plan of treatment which was so largely resorted to by physicians in the early part of this century. Where the condition of the patient is pressing because of interference with vital functions it is often absolutely necessary for the purpose of saving life to be bold enough to abstract by means of a trocar and cannula, if necessary attached to an aspirating flask, fluid which may be pressing upon the lungs or upon the heart. That paracentesis pericardii is an operation surrounded by far greater difficulties than paracentesis thoracis or parcentesis abdominis is manifest, and those who have had much experience in clinical medicine or in the performance of this operation have often found it most difficult first to decide positively that the symptoms and physical signs are due to the pericardial effusion and not to dilatation and hypertrophy of the heart. The history of pericarditis, however, the marked increase in the area of cardiac flatness downward to the right and left, the distant and feeble character of the heart sounds, and the evident manifestations of cardiac embarrassment, are at least objective signs which lead the physician to strongly believe that fluid has accumulated in the pericardial sac.

After the difficulties of diagnosis have been put aside the question next arises as to the spot at which paracentesis pericardii is to be performed, and it seems probable that the point of selection is the fifth interspace close to the left border of the sternum, although others have suggested the fourth interspace, and still others that the cannula shall be inserted close to the right border of the sternum in the fifth interspace. The choice of the point for the introduction of the cannula depends very largely, however, upon the physical signs presented by the individual patient, although in the great majority of instances the fifth intercostal space close to the sternum is the area of preference. It having been decided to introduce the cannula in this area, even the most experienced physicians feel timid lest by reason of incorrect diagnosis or other cause they may wound the heart itself; and in some cases they prefer that the patient should die of his disease in the course of a few hours rather than run the chance of saving him on the one hand, or of suddenly ending his life on the other, by puncture of the heart muscle. While there can be no doubt that injuries to the heart muscle are always more or less serious in their possibilities, on the other hand we feel convinced that many physicians have an undue timidity in connection with this possibility. As a matter of fact injuries to the heart muscle itself are not capable of producing any more serious results than puncture or incision of any one of the other muscles in the body, unless the puncture is of such a character as to lacerate or sever a large number of heart fibers or the coronary arteries, thereby interfering with the action of the heart, or unless the puncture tends to strike one of the nervous ganglia in the heart muscle which govern the beating of this viscus. If the latter accident occurs the patient is certain to die, but the probability of this accident taking place must be in the majority of instances decidedly remote. Fur-

ther than this, the insertion of the ordinary trocar and cannula into the pericardium rarely wounds the heart excepting to produce a small punctured wound, which the peculiar crossed arrangement of the muscular fibers in the heart at once closes; and even if the cannula goes so deeply into the heart muscle as to penetrate the cavity of the ventricles and blood is drawn through the cannula, the mesh-like heart fibers immediately close the wound as soon as the cannula is withdrawn. Further than this, unless the cannula is plunged suddenly through the chest-wall and unless the heart is bound down by adhesions to the chest-wall, in the majority of instances the physician will be notified that the tip of his trocar has engaged the heart muscle by the to and fro impulse which is transmitted to the needle of the trocar and cannula by the action of the heart, and the slight withdrawal of the trocar and deflecting it to one side will remove it from the heart muscle and leave its end free in the pericardium, although the heart may still be felt beating against the side of the instrument. Aside from the danger of injuring one of the nervous ganglia of the heart by puncture, the only other danger of wounding the heart muscle lies in the possibility of damaging the wall of the auricle in such a way that free hemorrhage takes place into the pericardium, the patient dying not so much from loss of blood as from distention of the pericardium and consequent pressure upon the heart muscle; for the auricular wall not being so well provided with thick muscular fibers is more easily penetrated, and wounds are by no means so easily closed. That our position in regard to the danger of wounds of the heart muscle is correct is proved by the gradually increasing array of reports in current medical literature concerning cases of stab-wound or other wounds of the heart in which patients permanently recovered or lived for many hours or days after the injury, dying from some secondary affection. One of the most recent of these cases is that which is reported by Williams in the *New York Medical Record* of March 27, in which a man received a stab-wound three-fourths of an inch to the left of the sternum, which penetrated the chest and produced a small punctured wound of the heart about half an inch to the right of the right coronary artery and between two of its lateral branches. In this case, however, there was no hemorrhage from the heart or pericardium, but profuse hemorrhage from the internal mammary vessels. The hemorrhage from these vessels was controlled by operative procedures and the patient recovered, notwithstanding a sharp attack of pericarditis and pleurisy.

Again, the writer of this editorial has seen paracentesis pericardii attempted in a case in which there was great dilatation of the heart with pericardial adhesions, and it was found that there was no pericardial effusion. The trocar and cannula, however, passed into one of the cardiac cavities and one or two ounces of blood was aspirated into the bottle before the injury to the heart was recognized. On the next day, the symptoms of pericardial effusion being considered still more marked, it was decided to perform the operation a second time, and once again one of the cardiac cavities was tapped and pure blood was withdrawn. In each instance the withdrawal of the blood seemed to relieve the distention and congestion of the heart, and was followed for a number of hours by marked relief to the patient.

THE DANGER OF CHLORATE OF POTASSIUM.

For many years the medical profession, with but little knowledge of the pathological conditions connected with diphtheritic infection, and with still less information in regard to the influence of chlorate of potassium upon the human body, were in the habit of employing this drug in large quantities in the treatment of diphtheria, some using it because it was supposed to exercise a favorable influence upon the local diphtheritic process, both when it was swallowed and when it was eliminated by means of the salivary glands; others, still more ignorant of its influences, employed it with the ridiculous idea that it was capable of yielding oxygen to the body and so supporting the system; while still others believed that the additional oxygen which it gave forth actually aided in the elimination of the effete products of the disease and thereby enabled the patient to resist its ravages. With our increased knowledge concerning the bacillus of diphtheria and the pathological changes which its toxins produce in the body, this method of treatment became less and less popular, and finally, when the profession grasped the idea that chlorate of potassium was not the innocent drug that it was thought to be, its use in diphtheria became still more limited. We have reason to believe, however, that there are still quite a number of physicians who continue to employ it either as a matter of routine practise or because they

are unaware of its deleterious influences. The literature of medicine will be found to contain as each year goes by more and more cases in which the abuse of this remedy produces poisonous influences in the body, which are recognized to-day, although put down to other causes years ago. The object of this note is to insist upon the fact that the chlorate of potassium is, next to the cyanide of potassium, the most poisonous of the potassium salts. As an instance of this we may quote a case which recently occurred in Vienna, in which a boy of sixteen who was suffering from sore throat was given a gargle consisting entirely of chlorate of potassium. Either because of misunderstanding of the orders or through inadvertence the patient swallowed a considerable amount of the drug and death speedily resulted, the inquest revealing all of the usual signs of death from this substance.

THE PROPER CARDIAC STIMULANTS IN THE PRESENCE OF PERICARDIAL EFFUSION.

We have often pointed out in the columns of the THERAPEUTIC GAZETTE that the physician must be careful in the administration of remedies to see to it that no pathological condition exists in the body which renders the action of a given medicament useless or even harmful. Our attention has been called to the matter of the administration of cardiac stimulants in the presence of pericardial disease by an able paper which was recently read before the Association of American Physicians during the Congress in Washington in May, 1897, by Dr. Frederick C. Shattuck of Boston. In the course of this paper and its discussion the point was made that digitalis could be given with advantage to patients suffering with pericardial effusion with consequent cardiac failure, but from this view the writer of this editorial distinctly disagreed. Aside from the changes which may take place in the myocardium and in the visceral layer of the pericardium in the course of the various infectious processes which usually produce a pericarditis, certain physical conditions arise which are largely responsible for the very evident cardiac difficulties from which patients often suffer. The chief of these physical causes for impaired heart action in a certain proportion of cases is undoubtedly the large quantity of fluid which has been poured out into the pericardial sac, and which so presses upon the heart and distends the pericardial sac that the function of the cardiac muscle is only carried out with great difficulty. That the presence of the effusion is the chief factor in the production of faulty heart action under these circumstances is not only proved by ordinary processes of reasoning, but is confirmed by the fact that in those cases in which successful paracentesis of the pericardium has been performed the heart has been very much relieved, for a short time at least, or until the effusion has formed again, and has performed its function with an approach to that found in health.

There is no doubt that cardiac stimulants are of value under these circumstances. The question simply arises as to which one to employ, and of all those in which we have confidence it seems to us that the least favorable is digitalis, simply because the physiological action of this drug is to greatly increase the diastole of the heart, enlarging its cavities, and making it fill the pericardial sac much more completely than it frequently does under normal circumstances. In other words, digitalis, by increasing the dimensions of the heart during diastole, really adds to the difficulties of this viscus, which is already pressed upon by the effusion which is in the pericardial sac. Certainly it seems much more rational to employ in such cases not digitalis but some remedy like strychnine or strophanthus, alcohol or ammonium, which will support the heart, increase the activity of the circulation, and yet not materially alter the space which is required within the pericardial sac for normal cardiac activity.

THE SURGICAL TREATMENT OF CHRONIC GASTRIC ULCER.

A most valuable paper on this subject is contributed by Mikulicz to the *Berliner Klinische Wochenschrift*, No. 23 to 25, 1897, suggested apparently by von Leube's exhaustive thesis upon the limitations and results of the medicinal treatment of comparatively recent, non-complicated ulcers of the stomach.

Even in these cases operative intervention has been suggested by both physicians and surgeons. In a case of Leucke's the operation was undertaken for the relief of intolerable gastralgia and exhausting dyspepsia. By means of a gastro-enterostomy this patient was cured.

Hitherto, cases which have come to the surgeon have been in such a depressed con-

dition from starvation and bleeding that active intervention of any kind was extremely dangerous. None the less the results have been surprisingly good. They would doubtless be much better were operation undertaken at an earlier period.

In considering the advisability of operation for non-complicated ulceration of the stomach the surgeon should give due weight to the danger of operation and should be assured that by the use of the knife the patient can be decidedly benefited. Unfortunately, statistics do not enable us to judge accurately as to the mortality of gastric ulcer not subject to operation. The mortality figures vary from five to thirty per cent. It is fair to conclude from the result of autopsies that three-fourths of all gastric ulcers heal spontaneously. Many of these cases, however, ultimately die because of stenosis from cicatricial contraction, or from phthisis greatly aggravated by the ulcer, or from malignant disease.

Gerhard states that in from three to five per cent. of cases death occurs from hemorrhage; in thirteen per cent. from perforation; in ten per cent. from stenosis of the pylorus.

Debove and Raymond give a mortality of fifty per cent. In 100 cases they find that death occurred from tuberculosis in twenty, from peritonitis in thirteen, bleeding in five, inanition in five, and other complications in seven.

Mikulicz holds that when all complications are considered the mortality will range between twenty-five and thirty per cent. He believes that surgical intervention is always indicated when internal treatment proves unavailing.

As to the mortality of operation: Of 238 cases of pyloric stenosis and gastric ulcer without serious complication operated on in the clinics of Billroth, Czerny, and Mikulicz, there was a mortality of 21.8 per cent. The operations performed were resections of the stomach, gastro-enterostomy, and pyloroplasty. The mortality of the resection cases was greater than that of those subjected to gastro-enterostomy and pyloroplasty. It is worthy of note that defects in technique are rarely the cause of death, but rather this is attributable to the extremely reduced condition of patients.

It may be said as a result of this statistical study that the danger to which a patient with an open uncomplicated ulcer of the stomach is exposed is decidedly greater than the danger which he would run if subject to a well-directed operation.

When medicinal treatment has failed operation is imperatively demanded. Surgeons heretofore operated mainly for the relief of the pyloric stenosis, whether this was due to a cicatrix of an old ulcer or was associated with an open sore. It is proved beyond controversy that relief of the stenosis is followed by healing of the ulcer, the stomach completely recovering its motor and secretory functions in a few months at most. These patients gain rapidly in weight and strength and become completely able-bodied. A similar success attends the operations on ulcers not complicated by stenosis. Küster's two cases in which intervention was required because of bleeding recovered very promptly, as did two patients operated on by Mikulicz.

Gastro-enterostomy is credited with having healed a number of discharging gastric ulcers, but to this operation Mikulicz greatly prefers pyloroplasty. He found in a number of cases the pylorus greatly narrowed, not from cicatricial contraction, but from tetanic spasm of the muscular fibers. In two cases the ulcer was first excised and the fresh surface covered by mucous membrane, which was sutured over it, after which pyloroplasty was performed. In the four cases operated on the quantity of hydrochloric acid markedly diminished. Before operation it was double the normal, but rapidly lessened; in two cases it was normal within five months.

It is evident, then, that gastric ulcer can be cured by surgical intervention without attacking the lesion directly, but by making the rapid and complete emptying of the stomach into the duodenum possible; whether the narrowing be due to scar tissue or to muscular contraction, pyloroplasty is equally indicated. As to the choice of operation, resection of the pylorus and a portion of the stomach is by all odds the most dangerous and least authorized method of radical cure. Circular resection should be abandoned in cases of ulcer, unless there is a suspicion of carcinoma. The author has observed five such suspicious cases, in which he performed the operation.

As to the choice between gastro-enterostomy and pyloroplasty in the treatment of open gastric ulcer, since both accomplish rapid and complete emptying of the stomach-contents into the bowel, the preference should be given to that which is easier and least dangerous. Hence pyloroplasty is distinctly to be preferred. It is not indicated in all cases, however. Thus, if the pylorus is fixed or if its walls are densely infiltrated the operation will be extremely difficult.

As to the technique of the operation, the anterior wall of the stomach and duodenum should be incised to the length of two to two and a half inches. The suture of this wound at right angles to its length makes a wide communication and one which facilitates the physiological evacuation of the gastric contents.

This cannot be said of gastro-enterostomy, following which there may be only established a vicious circle, the stomach-contents passing into the bowel and thence toward the pyloric valve rather than away from it, and returning to the stomach. That this has actually occurred is shown by autopsy, a spur-formation preventing the ingested matter from passing into the ileum. There is no certain way of preventing this spur. This vicious circle Mikulicz attributes to muscular spasm rather than to spur-formation. In one case reported by the author in which this spur-formation was attended by intractable vomiting, a second abdominal section was performed and entero-anastomosis was established in a distended loop of bowel between the seat of gastro-enterostomy and the pylorus and a loop of gut below this point. This method of procedure is the only certain one by which the vicious circle may be prevented. When at the time of operation the stomach is found markedly atonic, gastro-enterotomy should, as a rule, be supplemented by this second operation.

The surgical complication of gastric ulcer which has been most frequently subject to operation is pyloric stenosis. The indications for operation and the technique are well known. Another complication requiring operation is adhesion of the base of the ulcer with the parietes or surrounding organs. Loose adhesions usually cause a chronic mild perigastritis—sometimes violent gastralgia.

The diagnosis between simple gastralgia and gastric ulcer is extremely difficult. Operation and freeing of adhesions cause in these cases complete relief of pain.

Cases in which after adhesions to the parietes the ulcer gradually penetrates are readily recognized. A hard tumor is formed which can be readily mistaken for carcinoma. It is usually associated with symptoms of ulcer, and the pain is extremely violent and is greatly increased by palpation of the swelling. Operation is absolutely indicated in these cases. The ulcer, together with the infiltrated portion of the belly-wall, should be resected and the resulting wounds closed by suture. Usually the stomach can be dropped back into the abdominal cavity. Of the eight cases collected by the author all were successful.

The most serious complication of gastric ulcer is perforation. From 1885 to 1894 thirty-five cases were operated on, with thirty-four deaths, a mortality of over ninety-seven per cent. From 1894 to 1896 sixty-eight cases were operated on, with thirty-six deaths, a mortality of about fifty-three per cent.

The prognosis in these cases depends upon whether the stomach was full or empty. Hence it follows that when perforation is feared nothing should be given by the mouth. Statistics show that cases of cure are four times as numerous when operation is performed in the first twelve hours as when it is postponed. The wisdom of the policy of waiting until the first shock has passed by before resorting to operative intervention is open to grave doubt. This shock is extremely likely to run on to fatal collapse. About eighty per cent. of perforating ulcers are placed in the anterior belly-wall, hence are accessible. Some are so placed that they cannot be reached, at times cannot even be found. None the less, cure has resulted from peritoneal tampon drainage.

As to treatment, excision is not necessary unless the ulcer is so placed that the procedure is extremely easy. The rent should be closed by suture. Often even this is not possible, either from location of the ulcer or because of the brittleness of the tissues due to inflammatory infiltration. In the latter case a portion of the omentum may be set over the rupture, or this can be closed by a sack of iodoform gauze.

In addition to the acute peritonitis set up by sudden perforation, there is a chronic peritonitis beginning as perigastritis, due probably to a very small opening closed by adhesions with neighboring parts. These adhesions gradually yield and a fibrino-purulent progressive peritonitis develops, at first confined to the region of the stomach, finally spreading through the entire subphrenic portion of the peritoneum. The diagnosis of this condition is difficult. The slighter cases heal spontaneously. The operation is likely to be extremely difficult.

Probably the most frequent complication of gastric ulcer is bleeding. When a large arterial branch is eroded a search should be made for it. In but two cases this search has been successful; one of these was treated by

the author. In three other cases operation was performed for the relief of bleeding. Because of inflammatory infiltration, checking of bleeding by ligation was impossible, hence the thermo-cautery was used. In case of hemorrhage the ulcer is usually placed in positions unfavorable for intervention. Only a very large vessel is liable to lead to life-threatening bleeding, and this is generally a vessel in the substance of the pancreas. A number of cases are recorded in which it was found impossible to find the seat of the ulcer. While the advisability of operation may be fairly questioned in case of sudden violent bleeding because of difficulty in diagnosis and difficulty in finding and securing the vessel when the ulcer bleeds repeatedly for a few weeks and months, there can be no question as to the desirability of operating.

Reports on Therapeutic Progress

THE TREATMENT OF INGROWING AND INGROWN TOE-NAILS.

In the *New York Medical Journal* of March 20, 1897, J. L. ANDREWS contributes an article on this practical subject. He first gives a definition of what we mean by an ingrowing toe-nail, and says it is a condition in which one or both sides of the great toe-nail seem to grow downward and press into the soft parts to an extent sufficient to cause pain on pressure, and more or less discomfort while walking. This condition is considered by some to be always due to a rolling upwards of the soft parts over the side of the nail, rather than an actual deformity of the latter.

As a matter of fact we see both conditions, and it is important to distinguish between them before giving a prognosis or selecting a line of treatment.

Where the soft parts are primarily at fault we may promise our patient a permanent cure, without operation, if our directions are carefully followed. Sometimes it will be only necessary to order a proper shoe. This shoe should have a low, broad heel, to prevent a wedging forward of the foot while walking. The inner side should be straight, to prevent pressure on the corresponding side of the nail. The toe should be sufficiently broad and extend far enough beyond the end of the foot to prevent pressure on the outer side from above and in front. If this is not sufficient, pack a small amount of cotton under the edge of the nail to protect the soft parts, and apply a strip of rubber adhesive plaster diagonally around the toe, in such a manner that the soft parts shall be drawn away from the nail without direct pressure over the latter. For this purpose a semi-lunar-shaped piece of plaster is often better than a straight strip. It should be applied with the convexity forward, one horn beginning just behind the nail on the affected side. This will allow the belly to catch the offending soft parts, while the rest of the piece is carried around the plantar surface of the toe and over the dorsum, crossing the first end. This dressing should be changed every three or four days.

In the first class, where the nail is really deformed, this plan is of very much less value. But many cases will be held in abeyance if we attend to the shoe, apply a cotton protection under the edge of the nail, encourage it to grow out beyond the soft parts, and keep them clean. However, this will sometimes fail, and the nail will become really ingrown. Neglected cases of both varieties almost invariably reach this stage, and this explains why, in dispensary practise, we nearly always see the latter variety.

Here there is always more or less hyperplasia of the soft parts, which are rolled up over the side of the nail in amount usually proportionate to the length of time the trouble has existed, and the amount of irritation present. Next to the nail there is a mass of granulation, discharging more or less pus. In nearly all these cases our treatment must be operative if we effect a cure, and in all of them it will be found the most humane procedure.

A modification of the method devised by Anger seems to fulfil the indications more perfectly than any other. He removes a wedge-shaped piece, including the offending side of the nail, all of the granulation tissue, and more or less of the hyperplastic soft parts. This leaves a flap with which to cover the raw surface. Anger secured the flap with adhesive plaster, put the patients to bed for a week, and did not let them walk for ten or twelve days. By the method about to be described the patients walk immediately, do not go to bed, and are generally discharged cured in from ten to fourteen days.

The success and comfort of the operation depend almost entirely upon little points of technique, and the writer gives them in detail:

The toes and foot are first scrubbed with soap and water, followed by a solution of bichloride of mercury (1:1000). For anesthe-

sia, ten to fifteen minims of a two-per-cent. solution of cocaine hydrochlorate is sufficient if distributed in the following manner: Introduce the hypodermic needle from before backward, just under the part of the nail to be removed; as soon as the skin is pierced inject a drop or two, and wait a moment before pushing it further; repeat the process until the root of the nail is reached. Withdraw the needle now, and, beginning near the primary puncture, distribute a few drops in the skin and soft parts along the outer side of the nail, nearly as far backward as the first joint. In this way the only pain felt is while the primary puncture is being made, and even that may be done away with by spraying with ethyl chloride or ether.

Next wind a small rubber tube around the base of the toe, to prevent blood from interfering with our work. Before making an incision swab the whole granular area thoroughly with pure carbolic acid, working it well down under the edge of the nail. Failure to do this will often cause infection and delayed union.

The first incision begins anteriorly somewhat beyond the edge of the nail, and is carried directly backward (separating a sufficient amount of the side of the latter) to a point a fourth of an inch behind the true matrix. This is deepened through the underlying soft parts, well down by the side of the phalanx.

The second incision begins anteriorly at the same point as the first, and curves outward and backward to join the posterior end of the primary incision. This is deepened through the soft parts around the outside of the nail until we reach the lowest part of the first incision.

Remove the wedge thus set free and search the posterior part of the wound carefully, so that no part of the corner of the nail or matrix shall be left. If we leave a piece of nail, immediate trouble will ensue; if only the matrix is left, another ingrowing nail will make its appearance in a few weeks.

If properly fashioned, the flap which we have will fit the opposite raw surface perfectly, and should be secured by one or two catgut sutures in front of the nail and the same number behind. Before removing the rubber band apply a moderately thick pad of gauze over the flap and bind it tightly to the toe with a few turns of gauze bandage. Now remove the rubber tube and complete the dressing.

The patients walk home, and although there is often some pain the first night it does not last longer, and they keep about with little discomfort. The dressing should not be changed in less than a week, unless there is some indication, and at the end of ten days or two weeks the cure will usually be complete.

The "Cotting" operation has, perhaps, been more frequently used in this class of cases than any other, and it has two strong points: it is very easy to do, and the ultimate results are nearly always good. In point of time it suffers in comparison, as the healing process requires from three to ten weeks. Another objection to it is the often painful process of changing the dressings every two or three days.

The second class of ingrown toe-nails, fortunately rare, will take but little of our time. Here the suppurative process has existed for a long time, and we have on either side and in front extensive hyperplasia, sometimes enough to almost bury the nail from sight. The nail is also lifted more or less from its bed, sometimes nearly as far back as the true matrix. The suffering is exquisite, and it is often impossible to wear any kind of a shoe.

A flap operation is here out of the question; the proximity of a suppurating surface which we must leave will defeat almost any attempt at primary union that we may make. Instead, we should pare off the hypertrophied parts on either side as in the "Cotting" operation. In front the part should also be trimmed down to the level of the bed of the nail.

In dealing with the nail itself we should be guided by the conditions present. If it is loosened nearly to the matrix, it would be better to pull it out and pack the socket with gauze; if the latter precaution is not taken the new nail will find contracted quarters when it comes out. Where the anterior and lateral parts of the nail are separated for only a moderate distance, the free part should be trimmed off to prevent the collection of pus. In these cases the healing process usually requires from four to twelve weeks.

A RESEARCH UPON ANESTHESIA.

In the *Journal of Experimental Medicine* for March, 1897, WOOD and CARTER publish the results of a research and conclude:

1. Lowered arterial pressure has a comparatively feeble effect upon the respiration, but when the pressure falls sufficiently, respiratory depression does occur.

2. Even excessive lowering of blood-pressure primarily stimulates the vaso-motor center, the sensibility of the center being evidently necessary to the automatic regulation of the circulation.

3. The circulation recovers itself more slowly after profound etherization than after a like chloroform narcosis.

4. It is possible for ether as well as chloroform to produce death some hours after the cessation of its administration, at a time when the cerebrum has long freed itself from distinct evidences of the narcotic, so that consciousness and intellectual action have been restored.

In applying these conclusions to the subject of practical anesthesia it is evident that the depression of the circulation produced by chloroform has effect upon the respiratory centers only when the pressure has fallen very low, and whilst it may be a factor in the production of respiratory failure during chloroformization, the failure must be chiefly due to the direct influence exercised by the drug upon the respiratory centers.

Clinical experience shows that nausea and general depression are more pronounced after the use of ether than after the use of chloroform, a difference which is strongly insisted upon by the advocates of chloroform as an important agent in favor of that anesthetic. Our research confirms clinical observation, and experimentally shows that the depression of the circulation produced by ether is more permanent than that caused by chloroform, the reason probably being the large amount of ether which is necessary to produce profound narcosis, with lowering of the arterial pressure,—an amount so large that it can neither be burned up in the system nor yet eliminated in the time which would be necessary for the much smaller amount of chloroform to be gotten rid of after chloroformization.

DANGERS OF ANTIPYRIN IN ERYSIPELAS.

In *L'Abeille Médicale* of March 27, 1897, it is pointed out by SPANOUDIS of Port Said that persons suffering from erysipelas seem to be peculiarly susceptible to antipyrin. It usually causes anuria and a profound fall of temperature, which have needed the administration subcutaneously of caffeine, and hot applications. As this has happened more than once to Spanoudis he believes that erysipelas is one of the infectious diseases in which antipyrin is contraindicated.

INTERSTITIAL INJECTIONS OF METHYLENE BLUE IN EPITHELIOMA OF THE FACE.

In the *Normandie Médicale* of April 1 M. DUBARRY relates the following case: The patient, a woman fifty-seven years old, stated that eighteen years before she had noticed a pimple of about the size of a pin's head on the right side of the chin. For ten years it had remained in about the same condition. She had never been alarmed until one day when, on scratching the spot, which had itched for some time, she provoked a hemorrhage that lasted for four hours. She then consulted her physician, who advised a little operation, but the idea of an operation frightened her, and she allowed seven years to pass before again consulting a physician. During the last two years of this period the disease had greatly increased, and the pimple had attained the size of a fifty-centime piece; the itching also had become more frequent and persistent, and the spot often bled, especially when the patient removed the scabs which covered it. An operation was again advised, but as there was no suffering the patient would not submit to surgical intervention. A year later the tumor had spread so rapidly that she decided to seek the advice of another physician, who, in view of the extent of the disease, strongly urged upon her the necessity of an operation; but she resolved not to have it done. Two years more passed, during which time the disease had progressed so rapidly that she became alarmed, and again sought the advice of a fourth physician.

At this time the scabby surface of the epithelioma occupied the entire right side of the chin from the hollow as far as the middle of the horizontal ramus of the maxilla; vertically, it extended beyond the fold of the lower lip, and beyond the body of the maxilla. The surrounding tissue was red, hard, and edematous, and the lip was much thicker on the diseased side. The tumor was divided into four lobes, each one of which was covered with bloody scabs. When the author tried to separate them a rather large quantity of bloody pus was discharged; he found also that the tumor was adherent to the periosteum of the maxilla.

An operation was urgent, but owing to the cowardice of the patient and the great loss of skin which would have resulted, and which would have been difficult to replace, the author resolved to try interstitial injections of methylene blue, although without any hope

of success. He used a ten-per-cent. solution in distilled water, and during the first applications he injected as much as thirty grains. Each time he saturated the entire diseased surface, pushing the needle as deep as possible until it touched the periosteum, and throwing the liquid in all directions. This was repeated as often as necessary. The tumor and all the red tissue surrounding it became of a bluish color. Several times hemorrhages were provoked, but they were not alarming or of long duration, and a slight compression rapidly arrested them.

After the first application the intense itching completely disappeared. During the first three months the author practised an injection regularly every two days, the average quantity of liquid injected being fifteen grains. After a month of this treatment the tumor noticeably diminished in size. After the third month it had diminished one-half; cicatrization occurred from the periphery toward the center. As recovery approached a more considerable resistance was felt; the tissues became more compact and denser. During the fourth and fifth months of the treatment only one or two injections a week were practised; the quantity of liquid used was also diminished in proportion as recovery advanced, and during this stage not more than two or three divisions of a Pravaz syringe were filled for the injection.

In the beginning of this treatment, when the quantity of liquid injected was very large, the urine became of a decided blue color, which disappeared gradually, and it was sometimes twenty-four hours after the injection was practised before the urine regained its normal appearance. At no time did the patient feel pain in the kidneys or experience trouble on micturition. In June, 1896, the treatment was stopped, five months after the first injections. In February, 1897, there was a firm cicatrix on the spot where the epithelioma had been, which was crossed in all directions by fibrous bands which were very resistant to the finger and adhered to the maxilla. The cicatrix was scarcely larger than a two-franc piece.

With regard to a complete recovery, the author states that up to the present time all the indications lead him to think that recovery will be permanent. Even if a relapse should occur, the same treatment may be resorted to again.

Methylene blue, says the author, seems to possess peculiar properties which are capable of making a profound change in the diseased cell or in the microbe which produces this affection. He is convinced that this mode of treatment will render great service not only in superficial cancroids, but in the deep cancerous affections, notably of the face; provided, however, the diseased spot can be put in contact with the medicament. Each diseased element should be saturated with this therapeutic agent until the noxious principle is profoundly charged with it.—*New York Medical Journal*, May 1, 1897.

THE THERAPEUTICS OF METHYLENE BLUE.

The *Medical Record* in its issue of April 24, 1897, speaks editorially upon this subject, and points out that until comparatively recent times blue pyoktanin was known as a local and general remedy in the treatment of inoperable malignant growths. Our readers are familiar with the varying success in carcinoma and sarcoma which has followed the use of this remedy as well as methyl violet in the hands of different observers since Mosetig in 1890 first advocated its employment.

Among the many diseases in which pure methylene blue has been more or less largely employed as an internal remedy may be mentioned acute and chronic Bright's disease, gastric hyperacidity, malaria, headache, diphtheria, cystitis, and gonorrhea. In the first Netchaieff, among others, has reported favorable results, even to the disappearance of albumen and hyaline casts from the urine, along with general improvement in various directions. Berthier has stated that it may be given with advantage in indigestion attended with pain, vomiting, and hyperacidity; the dose recommended is from one to three grains daily for several days, followed by a few days of rest, when it is to be resumed. Conflicting reports have been made upon the value of the drug in malarial affections by Guttmann, Ehrlich, Muehll, Lava, Mya, and others. In many instances it has seemed to act very beneficially, while in others it has failed. Lewy recently claimed in the *Berliner Klinische Wochenschrift* that marked relief follows its administration in various forms of headache, especially angiospastic migraine, nervous cephalalgias, and especially the head pains of neurasthenia. The relief is not alone temporary, but in many instances lasting. Ten doses of one and one-half grains each usually sufficed for a cure.

In diphtheria the use of the remedy either

as a local application or internally has seemed to be overshadowed by antitoxin and other methods of treatment. Recently several observers have advocated the remedy in acute gonorrhea, and Moore (*British Medical Journal*, January 16) has seen it cut short the acute stage and decrease the suffering. Allen has reported great improvement in some instances of chronic cystitis, and this in spite of the fact that several observers have noted strangury when the drug has been pushed; and Mya as well as Lewy advise powdered nutmeg to be given at the same time to prevent bladder irritation. The usual dose is one decigramme or one and one-half grains in capsule once, twice, or thrice daily. The urine becomes blue or greenish within five hours of the initial dose, and remains so for several days after the last dose has been given. It must be remembered that toxic symptoms may be produced, and in all instances it is well to give it in tentative dose until the patient's susceptibilities are tried. Methyl violet and impure pyoktanin are most apt to cause vomiting or other disagreeable symptoms.

ZITTMANN'S TREATMENT BY HOT AIR AND DECOCTIONS IN SYPHILIS.

In *Treatment* of April 8, 1897, COOPER contributes an article on this topic. He states that he has met at various times in his practise a certain number of cases of tertiary syphilitic ulceration which ran a very rapid course, the destruction of tissue being produced by phagedenic inflammation. This phagedenic inflammation cannot in the writer's opinion be deemed as solely due to the syphilitic poison, and it is very probable that other factors contribute to its production. Thus, given an individual who has contracted syphilis, and whose general health is destroyed by alcoholism, by tuberculosis, by malaria, or by any other cause, these are the cases in which we may expect tertiary ulceration to supervene, and in which this ulceration is more likely to take on phagedenic action.

After a large experience in this class of cases the author has come to the conclusion that the syphilitic element, although producing the primary ulcerative process, is not a very strong factor in the phagedena, for if this were so we ought to expect the administration of mercury or the iodides *secundum artem* to produce a rapid amelioration of the symptoms. But this is not so; on the contrary it will generally be found that the exhibition of these drugs, either singly or in combination, has not only no effect in staying the ravages of the process, but will greatly increase the destruction of tissue. Nay, the author goes further than this, and states that even after the phagedenic ulceration is stayed and healing has taken place, the administration of antisyphilitic remedies may reproduce the symptoms. He has seen this occur over and over again, and particularly wishes to emphasize this point.

The phagedenic process may occur at any part which is the seat of tertiary ulceration, the destruction of tissue taking place very rapidly, a few days frequently sufficing for the total destruction of the nose or the penis, should either of these parts happen to be the seat of the disease. It behooves us therefore to be very prompt with our treatment, in order that this deplorable condition of affairs may not result.

The nose is a very favorite organ to be attacked, and this may be partly due to a deficient circulation in that organ when exposed to cold.

Where the phagedena attacks the penis, the body, or the limbs, and the face remains free, one of the best modes of treatment consists in the continual warm-bath treatment; but where the nose is affected this method is obviously inapplicable. When this organ is attacked it is most necessary to have at our hands a method of treatment which will rapidly cut short the process, as if it progresses the results from an artistic point of view only are most deplorable, for unless the condition is recognized early, and efficiently treated, total destruction of the soft and bony parts of the nose will very rapidly ensue, and there can be no more disgusting sight than a noseless man, unless indeed it be a noseless woman, for even the most successful plastic operation can never gloss over the defect.

The writer has for some years been in the habit of prescribing in these cases a course of Zittmann's treatment, and in his opinion it is the very best remedy we have at our command for arresting the rapid destructive process of syphilitic phagedena. Under this course the destruction of tissue is rapidly stayed, the wound becomes healthy, and cicatrization of it promptly follows. As the writer has now seen and treated by this method a very large number of cases, he is desirous of placing the results of his experience upon record, hoping they may be of some benefit and service to those who may happen to have cases of a like nature.

The Zittmann treatment consists in keeping the patient in a room at 80° F. and administering certain decoctions according to a prescribed rule. For the reason that he finds a large number of practitioners have difficulty in discovering the really correct method of using this remedy—for this means of treatment is unfortunately generally ignored in surgical text-books, as well as in monographs dealing with syphilis—he appends the details as described in his work on Syphilis.

The course of treatment extends to a fortnight, during which time the patient is put upon a strict diet and regimen. The decoctions and pills are made from the following formula:

ZITTMANN'S DECOCTION NO. 1.

℞ Rad. sarsæ. cont., ʒ iv;
Sem. anisi,
Sem. Fœniculi, āā ʒ j, ℈j;
Fol. senna, ʒ j;
Rad. glycyrrh. contus., ʒ iv.

And in a linen bag:

Sacchar. alb.,
Alum. sulph., āā ʒ ij;
Hydrarg. subchlor., ʒ j, ℈ j;
Hydrarg. bisulph. rub., ℈ j;
Aquæ Cong., O vj.

Boil gently down to one gallon, strain, and put into four forty-ounce bottles. Label "The Strong Decoction."

ZITTMANN'S DECOCTION NO. 2.

To the dregs from No. 1 decoction add:
Rad. sarsæ. cont., ʒ ij;
Cort. lemon.,
Sem. cardam.,
Rad. glycyrrh., āā ʒ j;
Aquæ Cong., O vj.

Boil gently down to one gallon, strain, and put into four forty-ounce bottles. Label "The Weak Decoction."

℞ Hydrarg. subchlor., gr. ij;
Ext. coloc. co., gr. v;
Ext. hyoscyami, gr. ij.
Ft. pil. ij. Label "The Pills."

The patient is kept in a room at 80° F. The diet consists of: Breakfast—Boiled egg or bacon, tea; no sugar or spices. Lunch—Butcher's meat, vegetables; no fruit. Dinner—Soup, fish, poultry.

The evening before beginning the treatment the two pills are taken, and the next four days, at 9 A.M., 10 A.M., 11 A.M., and 12 M., half a pint of the strong decoction drunk very hot. At 3 P.M., 4 P.M., 5 P.M., and 6 P.M., half a pint of the weak decoction cold.

The patient is kept in bed, except for one hour every evening. On the fifth day he is allowed to get up; he may have a hot bath, and dress, and is allowed, if he asks for it, a little brandy or whiskey and soda.

In the evening two pills are administered, the patient starting the decoctions the next day as before. So the treatment goes on until the fifteenth day, when it is discontinued.

The following case illustrates the points which Cooper desires to insist upon, viz., that antisyphilitic remedies do more harm than good; that when healing has taken place their administration may cause a relapse; and lastly, that in Zittmann's course of treatment we have a very efficient method of staying the phagedena.

Mr. C., aged thirty-one, was under the care of Mr. Huxley for extensive tertiary ulceration. The ulcers were scattered over the body, scalp, limbs, and penis. The penis became the seat of phagedena, and Mr. Butlin was called in. Later on the writer was asked to see the patient with Mr. Huxley. The patient first noticed ulcerations on April 3, 1894, and he consulted Mr. Huxley April 10. Patient went into a nursing home, but in spite of treatment the ulcerations showed no signs of healing, but gradually grew worse. He was treated with tonics and one grain of mercury with chalk three times a day.

The phagedena rapidly spread and destroyed the body of penis. On May 19, 1894, he was first seen by Cooper, and continuous warm-bath treatment commenced. When out of the bath tartrate of iron lotion was applied to the phagedena sores. Cod-liver oil was given internally. All mercury and iodides were stopped. Under this treatment the patient grew gradually better, and the sores healed, so that on July 6 he was able to go to Margate under the care of Mr. Treves. About the middle of July patient was given a mixture containing iron and perchloride of mercury.

Very soon after this the nose broke down, and by the middle of August all the other sores had broken down. The mercury was discontinued, and Fowler's solution substituted. The nose healed up by September 29, but broke down on October 6. Perchloride of mercury was again prescribed, which was taken until November 20, when patient left Margate and came back to Mr. Huxley, who asked the writer to see him; the latter found the whole of the soft parts of the nose and the cartilages of the alæ were destroyed. All the other sores had broken down, and the ulceration was rapidly spreading. He ordered him to go immediately into a Home, and have a course of Zitt-

mann. Accordingly on November 22 the Zittmann treatment was commenced. The wounds gradually took on healthy action, and by the end of the fifteen days' course were well on the road to healing.

On December 13 the ulceration of nose was looking healthy. Skin-grafting was performed.

January 2, 1895, patient left for his home; all places quite healed.

The author saw patient in February, 1895. All wounds still healed; so he suggested a plastic operation for the nose, which was done by Mr. Bloxam, and proved very successful. At the present time (March, 1897) the patient is perfectly well, and has no sign of any return of his trouble.

PARALYSIS AFTER CHLOROFORM.

TASSE has recorded two cases personally observed by him, in which paralysis followed chloroform narcosis. He believes that such paralysis arises from several causes: First, from the position in which the patient is lying, whereby pressure is exercised upon a supplying nerve, or as a result of tractions on the arm or leg of a violent nature. Second, the employment of impure chloroform, which seems capable of poisoning the nervous system and producing such paralysis, at the same time developing transient or permanent albuminuria. He also believes that in some rare instances the chloroform renders the patient susceptible to microbic intoxication, with secondary paralysis from this cause.

SOMATOSE IN THE TREATMENT OF PERSISTENT VOMITING OF PREGNANCY OR AFTER ANESTHESIA.

In the *Journal de Médecine de Paris* of April 18, 1897, LUTAUD records his experience with somatose in the treatment of these conditions, first calling to mind the fact that somatose is not a medicament but is intended for nutritive purposes. Thus in one case a woman at the fourth month of pregnancy vomited with such persistence that grave emaciation and exhaustion came on, and it was thought that it would be necessary to bring on labor. Nothing remained on the stomach, and finally nutritive and rectal injections were resorted to and artificial serum was also given. At this time the idea occurred to the writer to use somatose. At first a small teaspoonful diluted with a small quantity of water was well borne, and gradually the quantity was augmented until after a week four teaspoonfuls of somatose could be taken. Vomiting stopped, the stomach began to be able to retain various liquids, and finally it was possible to administer milk, cocoa, and various soups, which had been fortified by the addition of somatose. He then details four other cases of a somewhat similar character, concluding with one in which there was grave anemia following loss of blood due to metrorrhagia and traumatic hemorrhage. Lutaud believes that this form of nutrition is valuable in many of these cases.

THE VALUE OF DOVER'S POWDER.

In the *Journal des Praticiens* for April, 1897, is an article by LIEGOIS upon Dover's powder. He first points out that this substance will very frequently relieve the pains, and cure, at least for a considerable period of time, muscular rheumatism; the doses varying from five to ten grains for this purpose. Many years ago French physicians were in the habit of administering from one to two grains of this powder to children of four to six years who were suffering from subacute articular rheumatism. He also believes that it is a remedy capable of doing very great good in measles and scarlet fever, since by the perspiration which it induces it aids in the development of the rash, and quiets the fever and nervous agitation. In certain cases it is well to administer it with sulphur. Thus a prescription may be written containing Dover's powder and washed sulphur, of each two or three grains. This will tend to move the bowels and will also exercise a favorable influence upon any catarrhal process which may be present in the body. In cases of influenza Liegois believes that Dover's powder is exceedingly useful in relieving the pain and inflammation of larynx and bronchi, the pain in the limbs, and many of the other characteristic concomitant symptoms. As a rule it is sufficient to administer two to three grains of the Dover's powder three times a day. Sometimes the following prescription is advisable:

℞ Dover's powder,
Sulphate of quinine, of each 2 to 4 grains;
Powdered hyoscyamus leaves, ¼ grain.

Make into a pill or cachet and administer one or two each day.

In case of pulmonary congestion complicating the eruptive fevers the internal administration of small doses of Dover's powder is very beneficial. Again, in certain

cases of diarrhea in adults or children, particularly if they have been exposed to heat, the combination of Dover's powder and mercury with chalk is useful. Thus we may prescribe Dover's powder one grain, mercury with chalk one grain, and extract of rhubarb one or two grains. A pill containing these quantities of these ingredients may be given three or four or more times a day. In diarrhea dependent upon tubercular enteritis cachets containing the following prescription may be used:

℞ Dover's powder, 2½ drachms;
Compound chalk powder,
Calumba powder, of each 5 drachms.

To be made into 60 cachets, and two or three are to be taken each day.

FORMALDEHYDE SOLUTION IN THE TREATMENT OF DISEASES OF THE NOSE, EAR, AND LARYNX.

An abstract in the *Revue de Thérapeutique* of April 15, 1897, of an article published in a Russian journal by YATCOUTA describes the results which he has obtained in the treatment of these affections by the use of formaldehyde gas solutions. In the treatment of laryngitis and chronic nasal affections he places a five-per-cent. solution of formalin in a glass carafe and instructs the patient to inhale the vapor which arises therefrom on shaking the vessel. This treatment is carried out two or three times a day and lasts from five to ten minutes. He asserts that in the treatment of acute laryngitis the results are most favorable, a complete cure being arrived at in from seven to twenty-four hours in the sixteen cases in which he tried it. In three cases of acute coryza the condition disappeared in twenty-four hours after the use of three or four douches of a weak formaldehyde solution. He also believes that in catarrh of the Eustachian tube the use by means of a Eustachian catheter of formaldehyde solution is of value. The employment of this treatment produces a sensation of burning and tingling in the nose or in the throat, and sometimes cough. There is also apt to be some irritation of the conjunctiva, with coryza.

A PRESCRIPTION FOR ASTHMA.

The *Journal de Médecine de Paris* of April 14, 1897, gives the following prescription:

℞ Tincture of opium, 1 drachm;
Sulphuric ether, 2 drachms.

Fifty drops every half hour until the patient is relieved.

THE ANTIGALACTAGOGUE INFLUENCE OF CAMPHOR.

At a recent meeting of the Society of Medicine of Nancy HERRGOTT read a paper upon this topic and remarked that Tennisson found that antipyrin possessed antigalactagogue influence as long ago as 1890. The method which Herrgott employs is to dimish the quantity of the patient's drink, to administer purgatives, and to place over the breast which is to be treated an ointment or liniment of camphor. When antipyrin is used for this purpose ten- to fifteen-grain doses twice or three times a day are needed, but Herrgott asserts that this use of antipyrin has never given him favorable results, although he admits that the danger is not as great as one would suppose. The camphor may also be given internally in the dose of one or two grains once, twice, or thrice a day, and it is asserted if the external and internal treatment are both resorted to the decrease in the secretion is quite remarkable.

TREATMENT OF SEXUAL ATONY IN THE FEMALE.

The *Journal de Médecine de Paris* gives the following prescription:

℞ Extract of cannabis indica,
Extract of nux vomica, of each 30 grains;
Aqueous extract of aloes, 7 grains;
Make into one hundred pills and take three a day.

INFANTILE ECLAMPSIA OF GASTRO-INTESTINAL ORIGIN CURED BY HYPODERMOCLYSIS.

In *La Presse Médicale Belge* of April 25, 1897, NAUWELAERS reported a case of this character, his attention having been called to an earlier communication of Solé in which was recorded the treatment of a case of puerperal eclampsia by this means.

On the 27th of December he was called to see a child aged seven weeks, who was being nourished by means of sterilized milk. The patient had been suffering from obstinate constipation, although it had gained considerably upon this diet. The abdomen was tense and painful and there were evidences of great nervous irritability, so that the child seemed to be on the border of a convulsion. On the next day the child had vomiting and green diarrhea, suffered greatly from colic, and was evidently in continual pain. On the 29th it was no better, and received some calomel. On the 30th the calomel produced vomiting, and the next day the child refused

to nurse and seemed quite ill. Three days later, at three o'clock in the afternoon, the child was taken with violent convulsions, and passed into a condition of profound collapse. Before the physician's arrival a hot bath had been given without very material modification of the patient's condition, and one week after it was first taken ill it was seized with a series of convulsions of considerable severity. The vomiting became frequent, there was somnolence interrupted by sharp cries of pain, the fontanelles were depressed, and the pulsations were very feeble. The child received some albumen water and later some bicarbonate of sodium, benzo-naphthol, and salicylate of bismuth; frictions were applied to the abdomen by means of chamomile oil. After three injections the bowels were moved. The next day the convulsions had disappeared, but later on returned. The patient afterward became desperately ill and passed into a state of collapse. Under these circumstances it was decided to inject normal salt solution into the subcutaneous tissues. This was done, with extraordinarily good results. The convulsions ceased, the general condition of the child improved, and ultimate recovery took place. The injections amounted to as much as two-thirds of a pint in eight hours. Altogether a considerable number of these injections were found necessary before they could be stopped.

THE TREATMENT OF FETID BRONCHITIS AND PULMONARY GANGRENE BY HYPOSULPHITE OF SODA.

The *Revue de Thérapeutique* of March 15, 1897, records the fact that DUMAS has employed this treatment in a large number of cases of bronchiectasis and in tuberculosis with cavities for the purpose of combating the fetid character of the expectoration and modifying the septic condition of the bronchial tube. He has employed creosote, guaiacol, myrtol, menthol, and a large number of other substances, such as eucalyptus and turpentine, but has obtained the greatest advantage from the use of the hyposulphite of sodium. He claims that this substance may be taken each day in the dose of from two to three drachms without difficulty; that it is eliminated partly by the urine and partly by the lungs. He has found that as much as half an ounce acts as a laxative and half as much more as a purge. Its action is not immediate. He considers that the hyposulphite of sodium is contraindicated where there is a tendency to hemoptysis, and for this reason it has to be used with some caution in pthisical patients with cavities. It does the most good in modifying the character of the expectoration in gangrene of the lung, being particularly useful in those cases which arise from traumatism, from the inhalation of irritant or toxic materials, or from gangrene of the lung complicating other diseases.

THE USE OF ICHTHYOL IN SMALLPOX.

La Médecine Moderne of April 21, 1897, tells us that KOLBASSENKO has highly recommended dressings containing ichthyol in the treatment of smallpox. It is employed in the following manner: As soon as the papules appear the skin is anointed with the following prescription:

℞ Ichthyol, 3 drachms;
Oil of sweet almonds, 2½ ounces;
Lanolin, 5 drachms.

Or,

℞ Ichthyol, 1 drachm;
Vaselin, 1 ounce.

This allays the itching and the pain, and modifies the degree of suppuration, and seems also to decrease the pitting.

A SKIN ERUPTION DUE TO ANTIPYRIN.

L'Abeille Médicale of March 27, 1897, tells us that LYON has reported to the Society of Therapeutists in Paris the case of a woman of thirty-three years, who several hours after the ingestion of antipyrin developed a general pemphigus-like eruption upon the skin and also upon the buccal mucous membrane. This condition lasted for ten days. There was also a scanty urine, but no albuminuria.

Blondel reported a case in which the eruption was accompanied by a stomatitis; and Goldschmidt of Strasburg is recorded as having seen edema of the lower extremities and the vulva, with blebs forming under the skin, as a result of full doses of antipyrin. All these symptoms ceased when the drug was stopped. In the discussion which followed the report of these cases Lyon expressed the opinion that they were only apt to occur in those persons with renal lesions.

DROPS FOR ATONIC DYSPEPSIA.

℞ Tincture of nux vomica, 2½ drachms;
Resorcin, 7 grains.

Mix and take five to ten drops three times a day.

HYPNOTICS FOR CHILDREN.

In *La Tribune Médicale* of April 21, 1897, COMBY is reported as considering this question in a clinical lecture. After pointing out the necessity of proper hygienic surroundings and feeding in the treatment of restlessness and sleeplessness in children, he proceeds to a consideration of the drugs which may be employed, such as orange flowers, chamomile, and similar gastric stimulants and nerve sedatives. He also calls attention to the fact that in certain cases codeine may be administered in syrup, and that even morphine and laudanum may be required. As a rule, however, the ordinary sedatives are much better than these pain relievers. The disadvantage of employing the bromides is that they stupefy the patient; very often tincture of musk ten to twenty drops, asafetida, valerian, Hoffman's anodyne, or a few drops of cherry-laurel water, will be sufficient to produce sleep. If chloral is employed it may be given in the dose of one grain for each year of the child. Or chloralamide may be used in the following prescription:

℞ Chloralamide, 10 grains;
Syrup of orange flowers, 1 ounce;
Water, 2 ounces.

Two teaspoonfuls an hour apart before going to bed.

In other cases a prescription composed as follows may be used:

℞ Bromide of potassium,
Chloral, of each 30 grains;
Fluid extract of hyoscyamus, 30 minims;
Fluid extract of belladonna,
Fluid extract of cannabis indica, of each 1 drachm;
Syrup of orange flowers, 1 ounce;
Elixir aromatic, 1 ounce.

A small teaspoonful for two doses before going to bed.

Comby thinks sulphonal should be administered in the dose of three or four grains to a child of three or four years. Trional seems to act equally well. Thus he cites a case of a boy two and a half years old who was attacked with scarlet fever and suffered from marked nervous excitement and insomnia, in whom five grains of trional produced a peaceful and quiet sleep during the entire night.

In another case, a girl of three years, convalescing from scarlet fever and suffering from insomnia, received the same dose of trional repeated for three days, with the result that useful sleep was produced. He then cites other cases in which it was equally useful.

[After reading this article we would like to call attention to the fact that very rarely is it necessary or advisable to administer such powerful hypnotics to children, unless it be in the course of some one of the acute infectious diseases when the nervous symptoms are most manifest. In our experience proper regulation of the diet and avoidance of excitement prior to bedtime produce all the results that can be desired.—ED.]

THE SUBCUTANEOUS INJECTION OF GUAIACOL CHLOROFORM.

La Médecine Moderne of March 10, 1897, states that COLLEVILLE has employed hypodermically a solution of guaiacol and chloroform in the proportion of six parts to ten. This is to be injected directly into a painful point in the dose of from fifteen to thirty drops, and has proved itself peculiarly useful in the treatment of nerve pains such as sciatica. If as much as fifty minims are given the injections are sometimes followed by induration, which, however, gradually disappears.

These injections are preferable to the morphine injections, and are to be preferred to rubbings and frictions.

PRESCRIPTIONS FOR CREOSOTE AND NAPHTHOL.

MAXIMOWITCH in the *Deutsche Archiv für Klinische Medizin* records his use for five years of these substances in the following prescriptions. As Alpha-naphthol is very strong he usually uses Beta-naphthol. But, on the other hand, he sometimes gives Alpha-naphthol as an intestinal antiseptic, with castor oil, as follows:

℞ Alpha-naphthol, 45 grains;
Chloroform, 5 minims;
Oil of peppermint, 2 minims;
Castor oil, 3 drachms.

The dose of this for a child of from three to ten years is one to three teaspoonfuls. He finds it useful in dysenteric diarrhea and choleraic discharges.

Tablets are prepared as follows:

℞ Alpha-naphthol, 5 grains;
Powdered rhubarb, 1 grain;
Extract of belladonna, ¼ grain.

One or two of these tablets are taken at a dose several times a day. In cases in which there are arthritic tendencies or oxaluria, or the uric acid diathesis, he is apt to combine with this tablet small doses of aloes or podophyllin, and in typhoid fever the dose of naphthol is increased from twenty to sixty

grains a day. He also believes that it is useful in the local treatment of erysipelas in the proportion of one per cent., and in laryngitis or tubercular laryngitis a spray may be used in the strength of ten per cent. The following prescription may be employed when it is advisable to use creosote:

℞ Creosote, 3 drachms;
Alpha-naphthol, 45 to 60 grains;
Powdered iodine, 3 grains;
Cod-liver oil, a sufficient quantity to make 6 ounces.

Half a teaspoonful of this may be given each day to a child of ten years. Or the following pills may be given:

℞ Creosote or guaiacol, 3 drachms;
Iodoform, 15 grains;
Eucalyptol, 1 drachm;
Arsenous acid, 1 grain;
Strychnine, 1 grain;
Sulphate of atropine, ½ grain;
Extract of gentian, and
Gum arabic, a sufficient quantity to make up 100 pills.

Three or four of these pills may be taken each day.

THE TREATMENT OF DIABETIC COMA.

In *La Semaine Médicale* LEPINE, of Lyons, reports still another case of diabetic coma treated with success by two drachms of chloride of sodium and two and a half drachms of bicarbonate of sodium in one quart of sterilized water.

A POWDER FOR CORYZA.

℞ Subnitrate of bismuth, 1 drachm;
Powdered camphor, 10 grains;
Powdered boric acid, 30 grains;
Hydrochlorate of morphine, 1 grain;
Hydrochlorate of cocaine, 1 grain;
Powdered benzoin, 15 grains.

A pinch of this is to be snuffed up the nostrils.

THE TREATMENT OF CARDIAC ARRHYTHMIA.

In *La Médecine Moderne* of March 17, 1897, HUCHARD contributes an interesting article upon this subject. He first considers those cases of cardiac arrythmia which are not to be treated by digitalis or by cardio-vascular tonics. Most of these cases arise from the excessive use of coffee or tobacco or alcohol, and can be cured by regulation of the diet or drink, the disturbance being either due to the direct effect on the nervous mechanism of the heart or to the irritation of the gastro-intestinal tract. In cases of tobacco heart there are very frequently evidences of pseudo-angina pectoris. In other cases, too, the condition of arrhythmia is to be removed by removal of reflex irritation such as diseases of the gastro-intestinal, uterine, or hepatic systems. In those cases in which there is organic disease of the heart, on the other hand, it will often be found that the gastric disorder is due to an imperfect circulation. Nevertheless, in these cases marked benefit may be obtained by improving the condition of the stomach by the administration of alkalies or hydrochloric acid, according to whether there is too great acidity or lack of acidity in the gastric juice. In nearly all these cases, unless there be marked feebleness of the heart, digitalis is contraindicated, and this drug by irritating the stomach may actually make the condition worse.

Many cases are more benefited by the administration of bromide of potassium and atropine than by the administration of digitalis. Finally, in ordinary intermittence of the cardiac action digitalis, as a rule, will be found absolutely useless.

The second class are those in which digitalis and cardiac tonics are advisable. These are the cases in which the symptoms are continually present and in which there is an insufficiency of the mitral valves and an arterial change. If, however, there be much myocardial change digitalis does little good, and in its stead strophanthus is to be employed. In the arrhythmia which is sometimes seen in the aged, digitalis must be employed with caution, because of atheromatous changes in the blood-vessels; and where it is not considered wise to employ it, it may be necessary to give other cardiac tonics, such as sparteine, in the dose of one-half to one grain several times a day, at the same time reducing blood-pressure by the use of a milk diet and nitroglycerin. If, as already pointed out, there is marked myocardial degeneration associated with the arrhythmia, digitalis does little good. Many of these cases are much benefited by an absolutely rigid milk diet. The last set of cases are those in which there is an excessive arterial tension. This usually occurs in persons with atheromatous changes, and because of these changes and the high tension digitalis rarely does them good, at least until sufficient doses of nitroglycerin have been used to render the arterial tension approximately normal. In all these cases, however, the regulation of diet and the maintenance of a normal gastric action is absolutely essential.

THE USE OF HYPODERMOCLYSIS IN THE TREATMENT OF CHOLERA INFANTUM AND THE HEMORRHAGE OF THE MENOPAUSE.

In the *Journal de Médecine de Bordeaux* for April, 1897, DURODIE considers the value of artificial serum injections in these conditions. He first cites some of the original literature in regard to their employment, particularly concerning the strength of the solutions that should be employed. In pressing cases intravenous injections are to be resorted to. As a rule one and a half quarts is quite a sufficient quantity either for hypodermoclysis or intravenous injections, whether the condition be one of hemorrhage or one of shock or toxemia.

[This quantity has usually been found quite sufficient in our experience.—ED.]

THE TREATMENT OF TYPHOID FEVER BY GUAIACOL.

In the *Journal de Médecine de Bordeaux* KETCHER records brilliant results which he claims to have obtained in twenty-nine cases of typhoid fever by the use of guaiacol. In all these instances he believes that the course of the disease was considerably modified by its employment, either when used internally or externally.

HYDRASTIS CANADENSIS IN THE TREATMENT OF BRONCHIAL CATARRH.

In the *Centralblatt für Innere Medicin* of May 1 Dr. M. SAENGER, of Magdeburg, gives his impressions of hydrastis as a remedy for bronchial catarrh. It seems that some six years ago he prescribed it for a patient whom he was treating for a tuberculous affection of the larynx and apex catarrh, the immediate occasion of its employment being a trifling hemoptysis caused by the patient's lifting a heavy weight. Four days later Dr. Saenger saw the patient again, and learned from him that for three days there had been no blood in the expectoration, and furthermore, that a tormenting cough with which he had suffered had completely disappeared, the expectoration had become decidedly less, and the character of the sputa had changed in that they were far less frequently greenish and tenacious than before. The patient, a man of intelligence, imputed all his improvement to the use of the medicine that had been ordered for him.

Although Dr. Saenger himself was properly skeptical as to this point, he tried hydrastis on another phthisical patient, not for the purpose of checking hemoptysis, but to mitigate a troublesome cough with great difficulty of expectoration. In this case, too, there was great improvement. For the most part the sputa lost their purulent admixture and became thinner. The patient declared that the medicine had given him more relief than he had obtained from the morphine, codeine, Dover's powder, apomorphine, and other like drugs that had previously been ordered for his cough. His night's rest was no longer disturbed by coughing, he could breathe easier and deeper, he felt stronger, and he was better able to attend to his business. As in the first case mentioned, physical examination of the thorax showed a notable diminution of the bronchial catarrh.

Subsequently Dr. Saenger used hydrastis in a great number of cases of bronchitis, including those not dependent on the tuberculous trouble. He found that in the initial stage of acute bronchial catarrh it was quite ineffectual, but that in the subsequent course of the disease it was beneficial, especially if the course was protracted and the sputa had lost their purely mucous character and assumed a muco-purulent aspect. He found the remedy particularly efficacious in chronic bronchitis, for it mitigated the cough strikingly, facilitated expectoration, changed the muco-purulent character of the sputa to a more mucous one, and decidedly diminished the physical signs.

As compared with opium and its derivatives, says Dr. Saenger, if hydrastis is not quite so prompt in its action in checking the cough, it is more enduring and its final effect is greater, for it acts upon the cause of the cough, producing a more or less complete disappearance of the catarrh. As an expectorant, it is at least equal to the other expectorants and solvents that are in use. So far as can be judged from physical exploration of the chest and from examination of the sputa, it far excels the other anticatarrhal drugs in use. He states that he could not do without hydrastis now in the treatment of bronchial catarrh, acute as well as chronic, for it enables him to dispense with the use of opium and its derivatives almost entirely in the treatment of tuberculous subjects.

He has employed it in the form of the fluid extract almost exclusively. To adults he gives twenty, twenty-five, or thirty drops four times a day, in a little sweetened water. In case it does not produce the expected effects, larger doses may be used. He has

not found hydrastinine so trustworthy as the fluid extract. He has never observed dangerous or unpleasant effects from the doses of the fluid extract mentioned, but he remarks that very large doses may give rise to angina pectoris in the subjects of heart disease and in very debilitated persons.—*New York Medical Journal*, May 15, 1897.

INJECTIONS OF IODOFORM INTO AND AROUND TUBERCULAR JOINTS.

GILBERT BARLING writes to the new journal *Treatment* about this therapeutic method, and says that the positive demonstration that many of the so-called strumous lesions coming under the care of the surgeon are really tubercular seems for a time to have upset the minds of some surgeons. They preached a crusade of extremely active treatment of many of these lesions, and especially of tubercular joints; indeed, they wrote and spoke as though tubercular joints were little more amenable to measures, other than operative, than malignant disease itself. Now that the new name for the old disease has become more familiar, we are able once again to recognize that tubercular joint disease is as a rule very amenable to treatment, and that the great principles of rest and immobilization, thoroughly carried out, bring patients through their troubles safely—often with practically healed joints. Whilst this is generally so, it happens in a certain number of cases, either from want of rest or from feeble tissue resistance in the patient, that the disease is progressive, and some supplementary treatment is needed to hinder its progress and to obviate the necessity of future excision or amputation. It is impossible here to discuss the many remedies which have been advocated. The writer proposes to deal with one only, of which he has now had several years' experience without any drawback, and from which in some cases he has seen very great advantage.

The remedy of which he writes is iodoform, injected into or around the affected joint. He has now discarded ether and olive oil as the vehicle for solution or suspension, and always uses glycerin, with a little water added if it is very thick. Suspended in the fluid is ten per cent. of iodoform, practically none of which is actually in solution. To the fact that the iodoform is not really dissolved, as it is in ether, is due no doubt the immunity from iodoform poisoning, from which none of the author's cases have suffered.

As to the method of injection and the preparation of the emulsion: The writer has often injected the fluid without sterilizing it, but as an extra precaution latterly he has had it heated for half an hour in a water-bath. The iodoform lying at the bottom of the fluid is not lost by volatilization. The emulsion is best freshly prepared. The syringe should be one capable of holding not less than six drachms, of being taken entirely to pieces, and it should be supplied with coarse needles as the emulsion is rather thick; all parts should be boiled just before use. The amount to be injected varies from one to five or six drachms, according to the age of the patient and the joint involved. For instance, into the knee-joint of a child of five or six years two or three drachms may be introduced; into the corresponding joint of an adult, twice that amount. It is not always necessary to inject into the joint cavity; greater advantage is often obtained by injecting into the thickenings of the tendon sheaths around, as in the wrist-joint, or into the pulpy thickenings produced by the tubercular infiltration penetrating the joint capsule, such as occurs in the front of and behind the great trochanter in the hip-joint. In these cases smaller quantity of the emulsion is used.

The immediate effect of the injection into a joint cavity is to set up a good deal of effusion, the swelling increasing for about twenty-four hours. This may cause a considerable amount of pain, and the temperature rises from two to four degrees, but by the fourth day it generally becomes normal, the pain disappears, and the swelling also in about ten days. If the injection is only into the tissues around the joint the local and general disturbances are much less marked. The injection may be repeated, either exactly into the same part or more often at one adjacent; but he has been in the habit of allowing at least a fortnight to intervene before repeating the attack.

It goes without saying that this is no remedy for tubercular lesions in the bones, such as are inaccessible to the emulsion; when, however, we have superficial caries of the ends, secondary to destruction of cartilage from synovial invasion, he believes the effect is valuable. It is, however, in the granulation thickenings, with caseation of the synovial membranes, tendon sheaths, and other soft structures around the joints, that the best effects are seen. The diminution of swelling, and the loss of the elastic semi-fluctuating feel that these tubercular forma-

tions produce, and eventually their disappearance, are the indications of the value of the remedy. How the effect is produced, whether by a specific action of the iodoform on the tubercle bacilli, or merely by the fibrosis produced by the irritation of the emulsion, he has no room to discuss; but his results with iodoform injections are very much better than those he has obtained with zinc chloride—so much so that he has discarded the latter. Every one is of course familiar with the difficulty in arriving at the correct conclusion as to the value of drugs in the treatment of disease. The statistical method has so many weak points that it is of no value here; the judgment of the individual surgeon must be taken for what it is worth, and he has no hesitation in saying that many of his cases have derived great benefit from injections of iodoform emulsion in tubercular joint disease. Rest and fixation are carried out by the writer thoroughly. If the cases are not doing well he resorts to the injections, still keeping the part at rest. If improvement now takes place instead of progress of the disease—a change he frequently sees—surely there is every justification for speaking well of the use of iodoform, seeing that the only altered condition is the injection of the emulsion. All cases do not benefit, and he is not able to distinguish positively what are the conditions under which the emulsion will do good.

If evil effects, local or general, followed the injections, they might weigh heavily against their use. But the writer is able to say that in no case, either in hospital or in private practise, has he seen any drawback beyond the slight feverish disturbance he has already described; and in private cases, when he has advised this treatment and left it to the practitioner in charge to carry it out, he has heard of no mishap of any kind, although he has always made inquiries.

A CASE OF POISONING BY JABORANDI.

Before the Society of Therapeutists of Paris on April 28 LAVAL recorded a case of a woman, suffering from chronic iritis, to whom was given thirty grains of jaborandi on one day for the purpose of producing profuse salivation and perspiration. As this dose did not produce the desired effect, a dose of sixty grains was given on the next day without marked influence. On the third day the patient obtained the larger dose of jaborandi from another druggist, and passed into a very marked sweat after the ingestion of the infusion. The treatment was continued on the fourth, fifth and sixth days. At this time the patient began to suffer from palpitation of the heart, nausea, great anorexia, and a sensation as if a foreign body was in the throat. There was also a sensation of thoracic constriction. An examination of the throat showed it to be dry and red. In the treatment of conditions of the eye and ear in which jaborandi is thought to be useful, it is probably better to administer the alkaloid pilocarpine hypodermically rather than to employ the infusion.

OBSERVATIONS ON THE ANTICIPATION OF POST-PARTUM HEMORRHAGE, WITH REMARKS ON THE ACTION OF ERGOT ON PREGNANT WOMEN.

This important topic is discussed by WALKER in the *British Medical Journal* of March 6, 1897. Finally we may say in regard to his views that they are when summed up as follows, at least so far as the action of eagot in combination with strychnine, which is the formula the author usually adopts, is concerned:

1. That when administered previous to the termination of pregnancy in the case of women in whom a tendency to post-partum hemorrhage is known to exist, it tends in a marked manner to prevent the occurrence of hemorrhage.

2. That when so administered in ordinary doses, it does not produce any injurious effect on either mother or child, and that its exhibition seems to delay the commencement of labor in such case.

3. It tends to make the involution of the uterus more perfect, and lessens the chance of the occurrence of subsequent uterine troubles, many of which depend for their cause on imperfect involution of that organ.

4. It will not bring on premature labor or induce abortion unless uterine action has previously been set going.

5. In cases of threatened abortion its administration frequently seems to act as a uterine tonic, and in some cases tends to avert the danger of a miscarriage, provided the ovum be not blighted.

6. That if the ovum be blighted, and specially if it be detached, ergot usually hastens its expulsion.

Since writing the foregoing the writer has observed in the Epitome which appears in the *British Medical Journal* of January 16

an abstract of a communication made by Professor Schwab on the efficacy of quinine as an oxytocic. This drug, he maintains, "stimulates the uterine fibers when once they have begun to contract of their own accord. Like ergot, it does not set contractions going." The writer has never administered quinine as an oxytocic during labor, but it will be remembered that he has stated at the commencement that it was the unexpected immunity from post-partum hemorrhage in a patient to whom he had administered quinine prior to labor that induced him to carry out the preventive treatment he now advocates, and that it was quinine he first administered for this purpose. His observations, therefore, tend to confirm the views enunciated by Schwab as to the action of quinine on the uterine fibers, and further observations of the action of quinine as an oxytocic should be made. He does not think, however, that it would prove as reliable a drug for this purpose as ergot is. Schwab, too, confirms the opinion he has long held, that ergot does not originate uterine action.

THE USE OF ARTIFICIAL SERUM INJECTIONS IN MENTAL AND NERVOUS DISEASES.

MAIRET and VIRES are quoted in the *Revue de Thérapeutique* of March 15, 1897, as recommending these injections in epilepsy and mental diseases, for they may do good and cannot do harm. Furthermore, in certain cases it is justifiable to add to the saline solution such drugs as bromide of potassium, ergotin, and phosphoric acid.

IDIOSYNCRASY TO CAFFEINE.

In the *Revue de Thérapeutique* of April 1, 1897, DALCHÉ reports a case of peculiar susceptibility to caffeine. The patient was a diabetic sixty years of age, who had suffered from secondary grippe pneumonia. He received four doses of five grains of caffeine each. Immediately after this he developed marked excitement, great loquacity, delirium, vomiting, cutaneous hyperesthesia, and the development of diabetic coma seemed imminent, particularly as the reddish-brown reaction with the perchloride of iron was obtained in the urine. After a short time, however, the patient rapidly improved. The author is inclined to believe that the patient had an idiosyncrasy to the drug rather than that his disease made him unduly susceptible to it; and in the discussion which followed Bardet mentioned a case in which a single drop of laudanum produced grave intoxication. Other cases have been known to follow the administration of the iodides, the bromides, and codeine.

Another reporter cited a case in which a young woman was seized with violent vomiting after being rubbed with a lotion containing laudanum; another case was seized with epistaxis whenever bicarbonate of sodium was taken in a little water; and in still another case the patient could not take nitrous oxide gas without the development of disagreeable symptoms.

THE USE OF SCOPOLAMINE.

TOMASSINI records in *La Riforma Medica*, No. 12, 1897, that $\frac{1}{200}$ of a grain of scopolamine is beneficial as a cerebral depressant in cases of meningeal insanity. If given in injections it does not produce much pain or local reaction. Sleep comes on rapidly, the patient being quiet in a very few minutes. The pulse is regular, being little diminished in force or frequency; respiration is not altered. Sleep usually lasts from four to five hours, and may be prolonged to eight hours without any interruption. The cases in which scopolamine is particularly indicated are those in which a powerful sedative is required, as for example acute mania and maniacal epilepsy.

THE USE OF THE HOT PACK IN THE TREATMENT OF THE INSOMNIA OF NEURASTHENIA.

In the *Revue de Thérapeutique* of March 15, 1897, D'AULNAY points out the valuable results which are to be obtained in producing sleep in neurasthenia by means of the hot pack. The patient is first sponged off with cool water and is then quickly wrapped in a blanket which has been wrung out of hot water. Outside of this is placed a dry blanket, and about this dry blanket is also placed hot bottles. The patient in the course of a few minutes breaks out into a sweat, and after this sweat has been continued for five or ten minutes he is placed between warm blankets, rubbed off with a towel, and soon goes to sleep. In this article the writer records a number of cases of nervous insomnia in which this treatment produced very good results. It is not very much trouble, particularly if the trained nurse can administer it.

THE TREATMENT OF MUCO-MEMBRANOUS ENTERITIS IN INFANTS.

COMBY in the *Revue de Thérapeutique* of April 1, 1897, directs that in the treatment of this condition we shall combat the tendency to adynamia and collapse which is frequently present. If necessary we should administer saline injections. Carefully sterilized food should be employed, and different things should be tried until that most satisfactory to the child is discovered. Very often the following prescription in this condition will be found of value:

℞ Bicarbonate of sodium,
Calcined magnesia, of each 5 grains;
Powdered nux vomica, ¼ grain.

This may be given to the patient two or three times a day according to the age. If constipation is a prominent symptom glycerin suppositories or small injections of glycerin made with a small syringe will be of value.

A CASE OF POISONING BY POWDERED PYRETHRUM.

FERRAND has recently reported to the Society of Therapeutists of Paris the case of a child of eleven months who took a considerable quantity of pyrethrum powder. Pallor, vomiting, collapse, slow and feeble heart, and depression of respiration asserted themselves, but the patient was saved by the administration of an emetic dose of ipecac. In some cases in which pyrethrum powder has been inhaled it has produced asphyxia by causing a spasm of the upper respiratory tract.—*Revue de Thérapeutique*, March 15, 1897.

THE TREATMENT OF CHLOROSIS.

In the *Revue de Thérapeutique Médico-Chirurgicale* is a paper by HUCHARD upon the treatment of chlorosis. He points out that these chlorotic cases can be divided into three classes: Those in which iron is absolutely useless; those in which it is fairly valuable; and those in which it is an absolute necessity. The cases in which it is useless are those which have been deprived of fresh air and sunshine, and only need proper food and outdoor life, with stimulant treatment, to regain their health. Those in which it is moderately valuable are the pseudo-chlorotics who have as an underlying cause a tendency to develop tuberculosis with general debility; but as a rule the more dyspeptic the patient the less good will iron do. The cases in which the iron is most useful are those in which the patients are devoid of dyspeptic symptoms, when any one of the common iron preparations may be given in large or small doses with advantage. Should there be a syphilitic dyscrasia underlying the anemia, mercurials should be administered in addition to the iron, preferably the bichloride of mercury.

THE TREATMENT OF THE VOMITING OF PREGNANCY BY OXYGEN WATER.

The *Journal des Praticiens* of March 20, 1897, quotes GALLOIS as having employed oxygen water with very great success in the treatment of the vomiting of pregnancy. He has often found inhalations of oxygen useful. The oxygen water which he employs contains ten volumes of the gas, and is administered in the dose of one teaspoonful to the ounce, diluted with an equal quantity of water; or in other cases diluted even further than this. The liquid is to be taken in small quantities, half to one teaspoonful at a time. He claims that its action is rapid and that relief is soon obtained.

THE TREATMENT OF WHOOPING-COUGH.

In *La Médecine Moderne* of March 3, 1897, a quotation is made from a Russian journal in which the following methods of treating whooping-cough are advised: In some cases it was found that oxide of zinc in small doses with small doses of belladonna diminished the number and intensity of the attacks, but the cases lasted from eight to eleven weeks. Out of twenty-five children treated with oxide of zinc two succumbed to bronchopneumonia. The author is therefore not inclined to regard the oxide as a specific in whooping-cough. In fifteen children from two to five years who received terpine hydrate in full doses, the duration of the affection was seven to ten weeks. He considers that the terpine is particularly indicated in those cases with bronchopneumonia. The bromide of sodium was prescribed in five cases in children from two to six years in the dose of forty-five grains to one drachm in a day. These cases lasted from seven to nine weeks. In eight cases antipyrin was given to children varying from three to six years. The dose was large—from thirty to forty-five grains—and the attacks were not very materially diminished. In other cases antipyrin and codeine were combined, and in fifteen of these cases the duration was from six to eleven weeks. In five cases the author used sprays of cor-

rosive sublimate in the proportion of 1 to 1000 in the pharynx, with the result that the treatment extended only over three weeks. DITEL, the reporter, concludes that during the convalescent period of the cough the bromides are the best treatment, and that they may be gradually replaced by codeine; that if fever is present antipyrin is indicated, and if bronchitis is marked terebine is useful. He concludes that there is no specific medication, and that our treatment must be purely symptomatic.

A CASE OF POISONING WITH ARSENIC INTRODUCED INTO THE VAGINA.

Treatment of May 13, 1897, abstracts from the *Wiener Klinische Wochenschrift* of March 4, 1897, the following interesting case. It was that of a servant girl, twenty-five years old, who committed suicide by introducing white arsenic into her vagina.

At the post-mortem examination, besides the typical signs of arsenic poisoning in the internal organs, the following interesting conditions in the genital organs were found:

Large labia much swollen, edematous; on them and in their neighborhood numerous small round pustules, surrounded by an inflammatory halo, some of them dried up; much excoriation about anus and buttocks. Inner surfaces of large and small labia much swollen, dusky red, covered with croupous exudation. Hymen destroyed. Lower half of vagina permeable; two inches above the vaginal orifice a mass of pale-yellow fibrinous exudation, which occluded the vagina perfectly; the whole upper half of the vagina lined with pseudo-membrane, one-third of an inch thick, which also covered the fornix, the vaginal portion of the uterus, and the cervical canal. Exudation firmly adherent to the immensely swollen mucous membrane, which was thrown up in thick folds of a vivid red color, and closed in round a plug of crumpled-up yellow paper, the size of a cobnut, which contained a great quantity of white, opaque granules; the mucous membrane of the lower half was covered by a thin membranous exudation; the rectovaginal septum swollen, brawny, infiltrated to the thickness of nearly one inch, and containing numerous ecchymoses. Anterior half of rectum for about two inches dark brown, infiltrated, its mucous membrane covered with bran-like flakes of fibrin.

The quantity of white arsenic found in the vagina amounted to nearly six grains; in the internal organs the analyst found half a grain of arsenious acid.

Deceased had not been pregnant. Only five cases of poisoning with arsenic from the vagina are on record.

THE DIAGNOSIS AND TREATMENT OF ACUTE RHEUMATISM IN CHILDREN.

M. B. CHEADLE, in *Treatment* of May 13, 1897, asserts that as in the rheumatism of children all the symptoms, both articular and constitutional, are usually subdued and subacute, active treatment by full doses of salicylate of soda is not usually required. The free exhibition of it is indeed often harmful by its depressing effect; children bear drastic treatment badly. When, however, the joint trouble and pyrexia are marked, the salicylate should be given in appropriate doses at short intervals until these subside. The milder drug salicin may in most cases be substituted for salicylate of sodium, given in doses of five to twenty grains; or quinine in doses of one to three grains every four hours. In each case an alkali, such as citrate of soda or potash, in full doses, should be combined—doses of five to twenty grains according to age. The use of depressant drugs, such as antipyrin, antifebrin, aconite, with a view to lowering temperature, cannot be too strongly deprecated.

The general evidence of statistics seems to favor the conclusion that cardiac inflammation is less frequent and less pronounced under full alkaline treatment than under any other. In the case of children this assumes special importance; the one great object of treatment should be to minimize this danger as far as possible. Whenever there is a suspicion of rheumatic inflammation, absolute rest in bed should be enforced, even if there is no sign of any affection of the heart. Complete physical repose and external warmth are essential.

The condition of slight rheumatism, in the case of children at all events, is treated far too lightly. Timely care in avoidance of fresh chill, of all excitement or strain of heart structures, may make all the difference in the degree of heart mischief remaining in the end. Dr. Sibson found that in acute rheumatism patients treated by rest escaped permanent heart lesion in the proportion of two to one, as compared with those allowed free action. When pericarditis supervenes, if there is much pain and distress, one or two leeches may be applied to the præcordia;

but anything like profuse extraction of blood is positively harmful. Children do not bear much loss of blood. The most effective local application is that of the ice-bag advocated by Dr. Lees. In pleurisy and pericarditis, where the inflamed membrane lies near the surface, and in intimate vascular connection with it, the application of ice appears not only to relieve pain but to exercise a favorable influence on the inflammatory process. It is usually grateful and readily accepted even by young children.

In cases of the deadly form of cardiac inflammation, which is perhaps the most characteristic feature of the rheumatism of childhood—viz., persistent, recurrent, subacute endocarditis and pericarditis—opium, digitalis, and strophanthus, with an alkali, are the drugs of most service. The former is best given as nepenthe in frequent small doses of from one to five drops, according to age, every four hours; and it does more than any other drug to relieve distress, lessen dyspnea, and subdue pain. If given with proper care it is perfectly safe.

Alcohol is also a most useful agent, as much from its sedative as by its stimulant property.

As a last resource, and in the case of older children only, when the heart shows signal signs of failure, when the first sound becomes short and feeble, and the pulse small and irregular, hypodermic injections of Liquor Strychniæ (B. P.) in doses of one-eighth drop to one drop or more, according to age—combined with five to ten minims of brandy—or one to three minims of digitalis, given in the same way, afford the most powerful means of resting the flagging heart. Usually, however, this only effects a brief rally and respite from the final collapse.

THE TREATMENT OF SOME FORMS OF HEMIPLEGIA.

LEONARD G. GUTHRIE, in *Treatment* for May 13, 1897, in discussing this subject points out that the actual treatment is largely based on prognosis—that is to say, on our knowledge of the course most likely to be pursued.

Thus, as the leg recovers before the arm, and its recovery is most important to the patient, we devote attention to it first. As joint movements return from above downwards in order, we treat joints in this order, so as to encourage the patient by the success which attends treatment of each in turn.

Passive movements are necessary from the first in order to prevent adhesive rigidity, which should never be allowed to occur at all.

Massage and electricity improve the general nutrition of the limbs. Artificial warmth is essential. Pine-wool coverings serve this purpose.

Galvanism is mostly useful. The strength of current should not exceed five milliampères, which, roughly speaking, requires from fifteen to twenty cells. The negative pole should be stabile, the positive mobile.

Faradism is contraindicated when spasticity is present, but is useful in flaccid cases. The primary current should as a rule be employed.

The patient should be encouraged to make the most of each return of power as it occurs. This is the most important part of the treatment.

Mechanical contrivances, such as elastic bands of increasing thickness, to be passed over adjoining fingers, and stretched by separating the fingers, and india-rubber balls gradually inflated to be compressed within the hand, are useful in flaccid cases. The patient should occupy himself in kneading and moving the fingers of the affected hand with the other.

Disordered association may be relieved by training. In teaching the patient to walk, the words "right," "left," should be uttered as advance of each limb is required. A sharp tap behind the affected knee at the proper time will sometimes relax spasm, and enable the leg to be brought forward. An elastic accumulator fixed above the knee and carried round the neck is of similar service. Dorsiflexion of the foot may be improved by appropriate exercises.

In conclusion, it is the non-recognition of functional conditions preventing recoveries from hemiplegia which brings discredit on the profession. Such cases swell the roll of miracles at the shrines of Bernadette and Winifride. Similar miracles may equally well occur at any physician's shrine.

TREATMENT OF CYSTITIS IN THE FEMALE.

In the *Polyclinic* of May 22, 1897, BLOOM tells us that in the treatment of cystitis, if acute, we should put the patient to bed at once. This is the first essential in the management of such a condition. The diet should be light and unstimulating—fluid, milk, broths, and eggs. Avoid all stimulants; keep the

bowels freely open with salines; keep the patient warmly clad. If the urine is acid, it should be rendered neutral by alkaline drinks such as Vichy water with plenty of soda in it, as well as by any of the prescriptions mentioned previously.

In nearly all these cases the water is alkaline, though not as frequently in acute as in chronic cystitis. The best agent for neutralizing an alkaline urine is benzoic acid, either in solution well diluted with water, or in five-grain capsules, which are preferable, every three hours until the desired effect is obtained. Use large draughts of water after each capsule. Salol, in five-grain capsules every two hours, until the water is acid, is most valuable where there is much ammoniacal decomposition.

Boric acid ten to twenty grains in cinnamon water every three hours soon corrects offensive urine. For pain, which is often a prominent symptom, there seems to be nothing better than five-grain doses of acetanilid repeated as indicated.

Irrigation of the bladder becomes a most important adjunct in the successful management of these cases; of course, if it is acute cystitis, not until after the acute symptoms have subsided. One of the best irrigations for this purpose is potassium permanganate in one-twelfth- to one-fourth-per-cent. solution. Another very good one is one-half-per-cent. solution of acetanilid. In chronic cystitis this is one of the most valuable solutions that can be used. It can be increased in strength if found necessary.

The technique of vesical irrigation is most important. The apparatus is very simple, consisting of a soft rubber catheter joined to a piece of rubber tubing by a short piece of glass tube. A small glass funnel is connected with the other end of the rubber tube. The whole apparatus can be from four to five feet long.

Sterilization is most important before using it and immediately afterwards. Upon thorough cleanliness depends largely the successful issue of the case. Asepsis and antisepsis are as important in this operation as they would be were one about to open the abdomen. After carefully cleansing the meatus urinarius as well as its immediate surroundings, the catheter, well lubricated with sterilized vaselin, is introduced, the urine drawn off while the instrument is still in place, and the tubing filled with the column of urine, thus preventing the entrance of air; the funnel is filled with the irrigating solution and gradually raised, distending the bladder slowly. The quantity used will depend upon the vesical irritability. Some bladders will not tolerate over an ounce; the maximum quantity should not exceed five ounces. The funnel is then lowered and the bladder evacuated in the same careful manner.

This procedure is repeated till the washings come away perfectly clear and clean. The temperature of the solution should be about 100° or 105° F.

We use this once a day at first, or at most twice a day, and after a few days lessen the frequency. Even this may fail in certain bladders to cure the trouble; then one will have recourse to drainage, keeping the bladder empty by a self-retaining catheter. This is proceeded to by first dilating the urethra to the point of paralyzing the vesical sphincter.

If this fails, Emmet's operation becomes necessary for draining the bladder through the formation of a vesico vaginal fistula.

If the vesical irritability is due to caruncle, the only permanent relief is total extirpation under careful antiseptic precautions. If due to fissure, or ulcer, dilatations of urethra, curettage, and the application of carbolic acid or silver nitrate, always being careful to draw the water through a sterilized catheter for several days, will meet with success.

In the treatment of gonorrheal vesical irritability nothing seems to do more good than the application of pure ichthyol to the urethra after carefully cleansing it with a solution of mercury bichloride, and giving internally a capsule of two grains of ichthyol and five minims of oil of sandalwood every three hours, and one or the other of the prescriptions mentioned.

In chronic cystitis it is important to look after the general health, as well as the local treatment, and if it is, as is often found, associated with a retroversion, the success will be very much greater if the uterus is restored to its normal position.

SOME RECENT SUGGESTIONS IN THE TREATMENT OF EPILEPSY.

Since the introduction of potassium bromide in the treatment of epilepsy by Sir Charles Locock in 1857, no agent has been found so generally useful. It is admitted, however, that the bromide treatment leaves much to be desired, and therefore new remedies are brought forward continually with the hope that they may prove more efficacious

in controlling the paroxysms, and at the same time less active in producing untoward symptoms. It has been clearly shown that certain bromide preparations have a less deleterious effect on general nutrition than others, though the same salts may be, to some extent, less powerful; this is particularly true of strontium bromide, which is far less apt to induce acne, mental depression, and gastric disturbance than the corresponding salts of potassium. According to Wood, both ammonium and strontium are stimulants to the circulation, while potassium is a powerful depressant. The strontium salt differs from the ammonium salt in being directly less active as a bromide, but in having a more happy effect on the alimentary canal. As the cost of the strontium salt has been lately considerably reduced, its employment in epilepsy will doubtless become more general. Within the last few years three drugs have been introduced in the treatment of epilepsy, which, though of little value, when administered independently are very useful adjuvants, and when combined with a bromide often lessen materially the amount of the latter required to control the seizures. These three remedies are antipyrin, the fluid extract of *Solanum Carolinense*, and opium. Antipyrin, in doses of ten or fifteen grains a day, can be given with ammonium or strontium bromide for several months without ill effects. In some instances, however, its prolonged use excites circulatory disturbances, such as coldness of the extremities, cyanosis, and copious perspiration. *Solanum Carolinense*, or horse-nettle, was first recommended by Napier. Potts (THERAPEUTIC GAZETTE, December 10, 1895) draws the following conclusions from the use of this drug in seventeen cases of epilepsy: That the drug has a decided influence for good upon the epileptic paroxysm; that this influence is probably not so great or so sure as that obtained by the use of antipyrin and the bromide salts, or even of the mixed bromides; that in those cases in which it is of service it relieves the paroxysms without causing unpleasant symptoms, such as are sometimes caused by the use of large doses of the bromides; that the dose ordinarily recommended (ten to fifteen drops of fluid extract) is too small, and that as much as a teaspoonful or more four times daily is often needed to secure results.

In the *Neurologische Centralblatt* of November 7, 1893, Flechsig announced that he had obtained brilliant results in epilepsy by prefacing the bromide treatment with the administration of opium in ascending doses. His method consists in exhibiting the extract of opium for six weeks, in doses rapidly increased from a quarter of a grain to five grains three times a day, when the drug is stopped, and half a drachm of potassium bromide three times a day is substituted; these large doses are continued for one month, and then gradually diminished until about thirty grains per day are being taken. This treatment has been quite thoroughly tested, and most observers agree that it is of decided advantage in certain cases.

Collins, who employed it in fifty cases, has drawn the following conclusions: The plan suggested by Flechsig, if not a specific in the treatment of epilepsy, in almost every case in which it has been tried there has been a cessation of the fits for a longer or shorter time; a relapse generally occurs in a period varying from a few weeks to a few months; the frequency of the fits after the exhibition of the opium is, for the first year at least, lessened more than one-half; the attacks occurring after the relapse are much less severe in character than those the patient has been accustomed to having. This plan of treatment is particularly valuable in ancient and intractable cases; in recent cases of idiopathic epilepsy it cannot be recommended. It is an important adjuvant to the bromide plan as ordinarily employed; the opium acts symptomatically and merely prepares the way for and enhances the activity of the bromides and other therapeutic measures. This treatment permits the use of any other substances known to have a beneficial action in epilepsy.

Sulphonal and trional are unquestionably of value, and occasionally succeed where the bromides fail. While the danger of chronic poisoning precludes their prolonged use, they may be prescribed with advantage when a temporary change of treatment is for any reason desirable.

In a certain proportion of cases the exciting cause of the paroxysms seems to be the absorption of toxic substances from the intestine, resulting from indigestion and constipation. This factor of autointoxication has been carefully studied by Herter and Smith (*New York Medical Journal*, August and September, 1892), who studied 238 specimens of urine from thirty-one epileptics. In seventy-two per cent. of the observations there was an unmistakable evidence of intestinal putrefaction, as indicated by the presence of ethereal sulphates in the urine in large quantities, just before the occurrence of the

paroxysm. Such cases are remarkably benefited by regulation of diet, the use of alkaline laxatives, and a course of intestinal antiseptics.

As regards the diet, recent investigations confirm the belief that most epileptics do best on a diet that is chiefly vegetable. Merson (*Dietetic and Hygienic Gazette*, March, 1892) has recorded the results of a series of observations on twenty-four chronic epileptics. Twelve of the patients were put on nitrogenous and the other twelve on farinaceous food, and this arrangement was continued for four weeks; when the diet was reversed, and observations continued for another period of four weeks. Out of the twenty-four cases there was, in fourteen, a decided decrease in the number of fits during the period of farinaceous diet; the average number of seizures for the farinaceous period was 10.7, as compared with 28.3 for the nitrogenous period. The same results were obtained by Short (*British Medical Journal*, May 18, 1895) in the treatment of fifty epileptic women who had previously been carefully observed for twelve months in order to ascertain the average number of fits.

The hope that surgical intervention might prove of great value in epilepsy has not been realized, and a more careful study of the cases subjected to operation has proved that this method of treatment has but a very limited field of usefulness. The two classes of cases in which operations have been performed are those resulting from reflex irritation and those dependent upon some focal brain lesion. It has been shown, however, that reflex epilepsy is very rare, the proportion of cases resulting from some peripheral irritation not exceeding one or two in a thousand; aud that, moreover, there are very few cases recorded in which the removal of a supposed local irritation has succeeded in permanently checking the convulsions. In the few cases of epilepsy resulting from brain injury the epileptic habit has been, as a rule, so firmly established that an operation rarely cures, and only seldom diminishes the frequency of the attacks.

Mason (*Medical News*, March 21, 1896) has tabulated seventy cases of trephining for epilepsy, and of this number three died from the operation, three were cured, and four were improved. If trephining and ablation of morbid tissue were reserved for cases in which the injury was received only a few months prior to the development of the epilepsy, the proportion of cures would doubtless be larger than is indicated in Mason's statistics.— *University Medical Magazine*, May, 1897.

SPRAINS AND THEIR TREATMENT.

Douglas Graham (*Boston Medical and Surgical Journal*, June 24, 1897) says an eminent surgeon once remarked to him, "What you do, doctor, with your massage and movements, is to cure the patients of the results of our treatment." The customary treatment of sprains and its results are well known—absolute rest in a fixed dressing, resulting often in recovery, but too frequently in stiff, weak, and irritable joints. Sometimes these joints are deliberately sprained over again by the surgeon, with a view to loosening adhesions and overcoming the stiffness. But, unfortunately, this plan may cause the adhesions to reform stronger than ever.

A form of treatment that is no doubt well adapted for sprains of slight or moderate severity of the outer aspects of the ankle has recently been revived by Dr. V. P. Gibney, of New York. It is strapping with strips of rubber plaster alternately at right angles to each other over the outer and lower third of the leg, ankle, and foot. Elevation of the foot over night or for a few hours, and immediate massage, are advised as good preliminary measures before applying the plaster. This treatment is said to involve no loss of time, to require no crutches, and not to be attended with any ultimate impairment of motion. This plan of strapping sprained ankles with adhesive plaster was used with brilliant success by Dr. Hood fifty years ago.

If the patient is wearing a well-fitting boot at the time of spraining foot or ankle, let him keep it on and walk about moderately. If the boot is not quickly snug by reason of the swelling, it should be laced tighter. The author has twice walked off a mild sprain in this way himself. The pressure of the leather and the motion of walking give a sort of automatic massage. And when we think of it, this is not so very wonderful after all, for it is safe and salutary in sprains to allow motion that does not cause pain. It is unnatural motion that has caused injury, and even after this natural motion can often be immediately indulged in to a greater extent than either physician or patient take the trouble to find out.

A plan of treatment that seems to be well suited to sprains of all degrees of severity, and which can be used with or without fixed

dressings and bandages, according to the indications, is massage properly applied. Massage should not be begun immediately over a recently injured joint; neither should passive nor active motion be encouraged in spite of pain caused thereby, whatever others may say to the contrary. After a recent injury, pain is the cry of Nature for rest to allow repair. And it is quite possible in sprain, and even in fractures without displacements, to keep the injured parts at rest while the surrounding tissues are preserved in health and activity, the circulation kept active and absorption hastened, by means of massage.

A snug bandage is usually sufficient to afford rest and support, and to press the swelling out in the intervals between the massages. But if the bandage does not give sufficient support, then an easily removable splint or plaster may be applied. Joints tender and swollen, that do not admit of massage being applied directly upon them, can be approached by commencing on the healthy tissues some distance above them and nearer to the trunk, by gentle stroking in the direction of the returning currents of lymph and blood, and gradually proceeding downwards. The healthy tissues beyond the seat of the injury should also be similarly treated, as the circulation is hindered in getting to and from them by reason of the swelling. Besides the soothing effect of this, which enables one to gradually encroach upon painful parts, the returning currents are pushed along more rapidly, making room for exudations to be carried off. For this purpose each hand should make alternate strokes, using the greatest possible extent of the palmar surface whilst the limb is in a comfortable position.

After working a few minutes in this manner, deep manipulation, or massage properly so-called, may be brought into play, beginning as before above the painful joint by adapting the greatest possible extent of hand and fingers, one hand contracting and making the greatest push upwards as the other relaxes while gradually approaching the objective point. The effect of this is agreeably benumbing or analgesic, lessening pain without decreasing ordinary sensations, besides pushing along the deeper circulation more vigorously. The parts beyond the sprain should be treated likewise. By alternately stroking and kneading in this manner we can soon make gentle, firm pressure over the but recently painful and swollen joint. If sufficient tact be used this pressure may not hurt, but be positively agreeable; and very soon it can have motion added to it, thus constituting massage by which the effusion and exudation are spread over greater surfaces and brought into more points of contact with veins and lymphatics, absorption by which is materially aided by the pressure of massage.

It should not be forgotten that when a light touch is disagreeable, firm pressure often affords relief, so that the whole hand is better than the finger-tips where it can be used for massage. Recent periarticular exudations are thus speedily dispersed and absorbed, which might in time have become organized, while superabundance of intracapsular fluid is pressed into the absorbents, the function of which within the joint is increased by the pressure from without and by the acceleration of their current from the massage above the joint.

In recent sprains and synovitis this method is rational, for it quickly relieves the heat, the pain, and the swelling, and takes the pressure off the nerve filaments. The comfort to a joint, even after a single sitting, cannot be believed unless felt. The good effects of the massage are continued by means of a bandage well applied; but the pressure of a bandage alone, though it affords support, hinders the circulation by its continuous pressure, and will not take the place of massage, which when rightly applied is an intermittent pressure and an aid to the circulation.

KRASKE has demonstrated that the application of a rubber bandage to the leg of a rabbit for six hours has produced hyaline degeneration of the muscles, from which they do not recover. If we want weak and atrophic muscles, let the bandage be continued after the swelling has disappeared. Rubber bandages the author would not advise except for temporary use, as when a patient with weak joint wants to go sea-bathing. They are intensely disagreeable on account of the smell of the rubber combined with the perspiration which they produce. They are dangerous by literally strangling the tissues, for each turn, by its elastic tension, represents much more compression than the force used in putting on. Often the author has taken them off and applied a domett (or cotton flannel) bandage, and always to the great delight and comfort of the patient. A domett bandage is firm, soft, warm, and comfortable; and when you have put one on, you know what you have done, and a few extra layers of this will often take the place of splint and plaster.

Some careful physicians who are in favor

of massage in sprains think it well to wait a few days while using hot and cold water or some other treatment before beginning massage. In this event the author is not sure that the effects of massage are not more striking in arousing the limb from the lethargy and stupor into which it has been plunged by the shock of the accident. When this local lethargy and stupor have been prolonged for a month or six weeks, as must necessarily be the case when a limb is done up for a fracture, the immediate effects of massage in bringing the limb back from death to life, in starting anew the circulation, in awaking sensation and motion, are often remarkable. But sometimes, under a plaster-of-Paris dressing, the connective tissue proliferates and assumes a plank-like hardness, a literal deadness, that is most discouraging to an intelligent masseur and which is a sure sign of tedious recovery. The author believes it is possible to prevent this by having the cast removed occasionally and the limb masséed without disturbing the fragments. Rest is necessary to produce ankylosis, and he does not see the need of allowing well joints to be imprisoned to such an extent that they will become stiff while a fracture above or below them is uniting, when a little precaution in the way of massage and passive motion might preserve the function of the limbs.

From the foregoing the following conclusions would seem to be justifiable:

A sprain is a wrench or twist of a joint—a sudden partial displacement of two articulating joint-surfaces, followed by immediate replacement.

The symptoms are pain, swelling, discoloration, and usually heat, with impaired motion.

Its diagnosis may be obscured by the swelling, which may conceal a fracture underneath.

Whatever will quickly reduce the heat, the pain, and the swelling — such as massage, snug bandaging, and elevated position of the joint—will proportionately make the diagnosis easier.

The means just mentioned are therefore not only valuable for diagnosis but also for treatment; and their use in many cases of sprains of all degrees of severity shows that they recover in one-third of the time that they require under absolute rest and fixed dressings without massage.

Even a sprain of a joint previously weakened by malignant disease may be rapidly ameliorated by massage, and useful motion gained before amputation.

PRIAPISM.

Dr. R. W. TAYLOR, of New York, read a paper on this subject before the American Association of Genito-Urinary Surgeons at its meeting in May last (*Journal of Cutaneous and Genito-Urinary Diseases*, July, 1897). He stated that this affection may be divided into the following classes:

1. Priapism observed in infants and children, induced by reflex action, in cases of long, tight, adherent prepuce, of stone in the bladder or prostatic urethra, and of worms in the rectum.

2. Priapism in adult subject, symptomatic of stone in the bladder, stone in the prostatic urethra, stricture, cystitis, and observed during retention. In these cases the uneasy or painful sensation is felt in the glans penis, while the body of the organ usually is only moderately congested and sometimes curved downward or laterally. This condition disappears upon the removal of the cause.

3. Priapism symptomatic of gonorrhea, with perhaps involvement of the corpus spongiosum and downward curvature. This condition is painful and transitory, and may occur several times during the night. In cases of downward curvature of the penis due to inflammatory engorgement of the corpus spongiosum and spasm of the musculature of the urethra, the term chordee is applied.

4. Priapism due to the ingestion of cantharides, which is a form that is seldom or never seen now, since this drug is so rarely used in medicine.

5. Essential priapism.

The latter form, which was the only one considered by the author, may be divided into four varieties: (*a*) Priapism caused by injury to the spinal cord (either high up or low down) and by blows or violence inflicted upon the perineum; (*b*) priapism which is a symptom of cerebral or descending spinal-cord disease; (*c*) priapism which occurs after alcoholic and sexual excesses; and (*d*) priapism which comes on a person in ill health, in whom it is difficult to obtain data as to local injury and causation, and in which cases there is now a tendency to look upon leucemia as the etiological factor.

Few definite statements can be made as to the prognosis of priapism of any form. In those cases in which injury to the corpora cavernosa or thromboses can be made out, incisions may greatly expedite the cure. The existence of spinal disease necessitates a guarded prognosis. In very much run-down

neurasthenic subjects, in sexual perverts, and those suffering from leucemia, the chances are that the priapism will be very persistent, and relapses are apt to occur.

In the author's opinion nothing like a routine method can be laid down. This much, however, can be stated with emphasis: Chloroform narcosis has failed in every case in which it has been used; ice usually does more harm than good; electricity has no value and may even be harmful; and leeches to the number of sixteen and forty have failed to produce any amelioration in the condition of the penis, and have been injurious in their depletory effects.

The speaker said that his own preference in dealing with these cases is to resort early to moderate and tentative incisions into the most turgid part, or into parts which are the seat of continuous pain, or into nodular masses in all probability the result of traumatism. It is always good practise in priapism to use either the potassium salt alone or in combination with mercury, when a history of antecedent or present syphilis is elicited. A number of cases are on record in which the condition was relieved by potassium iodide. Bromide of potassium, chloral, belladonna, and morphine may be of benefit, especially during paroxysms. Hot baths, hot and cold spinal douches, sponging with hot water, spinal cauterization, anodyne poultices, and perhaps ice-bags, may be found beneficial, but the latter must be guardedly used. Any ephemeral or systematic disorder should receive appropriate treatment.

Dr. Taylor reported two cases illustrating the points made in his paper.

A NEW METHOD OF REMOVING POLYPOID GROWTHS FROM THE BLADDER.

GEORGE CHISMORE (*Journal of Cutaneous and Genito-Urinary Diseases*, July, 1897) publishes a method which he believes no one has hitherto undertaken to remove vesical polypi by. Although his experience is limited to the two cases here reported — purely accidental in the first, entirely intentional in the last—the immediate results (checking a dangerous hemorrhage and relieving an overdistended bladder) were so easily attained that, whether the cure proves permanent or not, he believes the procedure of sufficient value to bring it to attention and to recommend it for trial.

The principle on which the operation is based is that of catching, by aid of the suction exerted by an aspirator attached to a litholapaxy catheter, or other suitable tube, the growth, or growths, in the eye of the instrument, when by gentle traction and slight to-and-fro movements they are torn from their attachments and drop into the reservoir of the wash-bottle.

To accomplish this he uses an ordinary curved litholapaxy tube, of available size, to empty the bladder, then couples on his evacuator, which is so shaped as to fit the hand and give one full control of the point of the catheter. He then injects two or three fluid-ounces of a borated solution as hot as can be borne, to which cocaine is added if needed to control the pain; then systematically go over the interior surface of the viscus with the point of the catheter, at the same time compressing and relaxing the bulb, trying by touch to locate the site of the growth. If the outflow is arrested when the point is in contact with the bladder-wall, the instrument is held stationary a few moments, the hand holding the bulb, regulating the amount of suction exerted, then gentle traction accompanied by a slight sawing motion is made.

If the occluding body be a polypus it will soon give way and quickly find its way into the reservoir. The author finds it easy to determine whether it be the healthy wall of the bladder that is caught or not, by the absence of the well-remembered thud and the evidence of pain that all who have done a litholapaxy will recall.

When a polypus is caught the check of the outflow is not nearly so abrupt; there is no expression of pain from the patient, the point of the occluded catheter is somewhat movable, and not apparently glued to a fixed spot; besides, in cases of pedunculated tumors the stoppage may take place while the eye is not nearly in contact with the bladder-wall. It is hard to convey in words the slight variations in the sense of touch, but he was astonished and delighted in his last case to observe how easily and clearly he located the site of the growths, and with what ease the tumors were brought away.

The writer supposed from his first case that the growth would have to be large enough to fill completely the eye of the catheter in order to make the suction effective; the second, however, clearly demonstrated that such was not the fact. There were many small polypi entirely too little to close the eye of the No. 25 F. catheter which he used. Either their bases must have been ses-

sile, several caught at once, or some alterations have taken place in the mucous coat from which they sprung that enabled the suction to exert sufficient power to drag them away.

For reasons that are obvious no estimate of the ultimate results of such an operation can be predicted, but it is contended that enough has been shown to make recourse to this simple and painless procedure justifiable in cases of emergency, where necessary time to remove a patient to hospital, or other preliminaries to more radical measures, are to be gained, particularly in those cases where the bladder is filled with clots, and retention from overdistention is present with its attendant suffering.

A CASE OF TOTAL EXTIRPATION OF THE BLADDER.

TUFFIER reports a case of total extirpation of the bladder, for an extensive tumor of that organ, followed by recovery.

The patient, a man forty years of age, had had urinary symptoms for three years, beginning with a sense of discomfort in the hypogastrium, which was soon followed by frequent and painful urination, which later became almost intolerable. Hematuria first appeared at the end of two years, since which time there have been abundant hemorrhages at irregular intervals. Patient's general condition was fairly good at the end of the first year.

On admission there was intense pain in the hypogastrium, radiating to the testicle. Suprapubic incision revealed a hard tumor with friable surface involving the walls of the entire left side of the bladder and the mucous membrane of the organ throughout. Free hemorrhage followed manipulation. The bladder was tamponed for twenty-four hours, and then drained for three weeks. The bladder was then extirpated. It was first tamponed with iodoform gauze. The abdominal incision was then lengthened, and it was further enlarged by a lateral incision on either side extending to the inguinal canal; the adhesions resulting from a former operation were broken down. The whole surface of the bladder was easily freed by the finger as far back as the points of entrance of the ureters. The bladder was then drawn upward through the wound, its neck was isolated by the finger, and the inferior vesical arteries and ureters were clamped and cut. The bladder being drawn high up through the wound, it was possible to dissect off its peritoneal investment, and to free it thus from its attachments; after which it was removed. The clamps were then removed from the ureters. A catheter was introduced into each, and secured by a single suture passed through the wall of each ureter. The sutures were left long. A small incision was then made into the rectum on either side, and the ends of the ureters, together with their catheters, were led through these and out through the anus. The sutures were attached externally to a rod, to prevent their ulcerating into the rectum. The cavity left by the removal of the bladder was tamponed with iodoform gauze and the abdominal wound was closed except at its lower portion.

The tumor proved to be an alveolar epithelioma. The patient's condition was critical on the second day, but thereafter improved. The packing was removed on the third day. At this time the urine was normal in quantity. On the sixth day the urine flowed through the abdominal wound as well as through the catheters. These were removed on the following day, and siphon drainage was placed in the abdominal wound. There was a fecal discharge through the abdominal wound on the ninth day, which persisted for two days and then ceased. On the twenty-first day a phlebitis of the deep veins of the right leg occurred, but did not seriously retard the convalescence, which was uninterrupted from that time. In the sixth week the patient was up and about; and thereafter he was well and practically free from all symptoms. — *Boston Medical and Surgical Journal*, June 24, 1897.

ADENOID VEGETATIONS.

E. O. SISSON in *The Laryngoscope* for June, 1897, gives a careful *résumé* of the subject. In regard to the treatment each operator has his own favorite method, and each one undoubtedly possesses advantages. The author simply outlines briefly the steps in the operation he makes, and which has yielded him very satisfactory results. That vexed question as to whether an anesthetic should be given seems to have been about settled by the different authors, they having come to the conclusion that it is best in children to give one: First, because they are unmanageable to a greater or less extent without it, and a more thorough and satisfactory operation can be performed when it is used; second, the danger attending the giving of an anes-

thetic in children is slight, and complete anesthesia is never required. In individuals above puberty so many things arise to modify the question that the operator should exercise his own judgment as to whether a complete removal under an anesthetic or repeated sittings is desirable. Again, the position of the patient during the operation has provoked much discussion, some preferring the sitting, the same as for tonsillotomy; others the recumbent. The latter seems to the author to be the most desirable, for as soon as the operation is completed the patient's head is hanging over the table, and the blood is passing through the nose and mouth, thus avoiding all danger from its running down the trachea. When the child is anesthetized, and the mouth-gag inserted (preferably Denhard's), it is a question of a very few seconds to tear out the larger portion of the growth with the forceps. The author used Gradle's model, or Casselberry's. The former is the one adopted and highly recommended by such men as Mayer and Asch, and is used exclusively in all their adenectomies. After removing the large portion of the growth with the forceps, he followed up with a thorough curetting, using Gottstein's antero-posterior curette. The after-treatment is simple: some efficient and pleasant antiseptic should be used as a gargle and mouth-wash, and the patient kept on a liquid diet for a few days.

CLINICAL NOTES ON A SIMPLE METHOD OF OPERATING ON VARICOSE VEINS OF THE LEG.

ARTHUR E. BARKER (*Clinical Journal*, June 16, 1897) states that having for some time past adopted a method of operating on varicose veins of the leg which has given excellent results, although departing in a measure from the usual routine, it appears desirable to make a note of it in order that others may test it. Its chief merit consists in the fact that no foreign body is left in the wound in the shape of ligatures or sutures, and that it saves much time. The latter point is one of considerable importance, not only to the patient, who is thus saved any prolonged anesthesia, but to the surgeon, who nowadays is called on to do a very great many of these operations, both in hospital and private practise.

It goes without saying that the method is only proper where perfect asepsis can be secured. The leg is first washed, shaved, and carbolized. Then the saphena vein is exposed as high as possible in the thigh, preferably at the saphenic opening, as recommended by Trendelenburg, by incision of about two inches long. The vein is then caught above and below by two ordinary serrated Wells forceps, and a piece cut out between them. A sponge is then placed in the wound and the vein is similarly treated lower down in three or four places—*i.e.*, wherever markedly varicose. When all the wounds have been dried, and all bleeding stopped with catch forceps, the latter are removed one by one, and an ordinary white gauze bandage, which has been steeping in 1-to-20 carbolic lotion for forty-eight hours, is applied to the limb in the usual way well below the lowest wound, and is wound round until it is about to cross the lowest wound. The edges of the latter are held together with the left thumb and first finger, and the bandage is carried across them. When the fingers are removed the edges will be seen through the transparent bandage to be coapted very accurately. If this is not the case at one spot or another, a probe slipped under the bandage, through which the edges can be still well seen, will easily adjust the edges, while the gauze is held taut. Then the bandage is carried up the limb, each wound being similarly treated. Over the gauze the author usually lays a strip of salicylic wool, and retains it with firm turns of an ordinary bandage to keep steady, elastic pressure. This dressing is left on until the tenth day, when the wounds will be found to be closed by a linear scar as accurately as if they had been stitched, and only require a little wool and collodion for a few days longer.

The advantages of this method—which is only an application of that which Dr. Crédé of Dresden applies to amputation wounds—are its simplicity, its rapidity, and that the patient has no removal of stitches to look forward to. There is also the advantage that no ligature is left in the wound. Such ligatures occasionally, though rarely, give rise to pain for weeks.

The only point to be specially attended to is the arrest of hemorrhage from collateral vein branches as well as from the main trunk, and even pressure.

Those who become familiar with this method will, the author feels confident, never go back to the more elaborate ligaturing and suturing.

From the patients' point of view, too, there is a great gain, and when told the day after operation that there is nothing further to be

done to the wound except to remove the dressings, they are more than satisfied.

In some cases where patients are inclined to vomit after the anesthetic, a fine ligature may be applied to the upper end of the saphena vein, as the forcing of sickness may break the adhesion produced by the forceps. But such cases are rare, and firm bandaging meets them.

SOME OF THE DIFFICULTIES OF CATHETERISM IN THE MALE.

Dr. A. KOLLMAN has contributed an article on this subject to a Festschrift für Benno Schmidt recently published in Leipsic. An abstract of the article appears in the *Centralblatt für Chirurgie.* The author deals with the hindrances of catheterism under normal conditions of the urethra, with no impediment in the way of urination. He refers them to the pubic symphysis, the middle layer of the perineal fascia, the sinus of the bulb, the prostatic sinus with the prostatic ring, and the trigonum vesicæ of Lieutaud, the most important of which, he says, is the sinus of the bulb. Among the circumstances which may lead to difficulty at this point is unusual sensitiveness of the mucous membrane of the part, contact of the catheter with which gives rise to spasmodic constriction of the membranous portion of the urethra, constituting the spastic stricture of authors. A point of greater significance is the aptitude of the bulbous portion of the urethra with an abundance of folds; and another is an unusual distance between the sinus of the bulb and the entrance to the isthmus.

As regards the folds and pockets of the remainder of the anterior urethra, the author agrees with Dittel and Grunfeld that importance is to be attributed only to the pocket on the upper wall of the fossa navicularis, often connected with a Morgagnian lacuna, and to the little rhaphe of mucous membrane on the border of the Morgagnian crypts of the pars cavernosa. Occasionally the former is remarkably deep, so that the instrument may catch in it; the latter can hardly prove a hindrance unless a fine flexible instrument is used. The same is true of the excretory ducts of the acinus mucous glands. In the normal condition of the urethra they are minute depressions invisible to the naked eye; under the influence of gonorrhea, however, they may attain a notable size, but never to a size sufficient for them to constitute an obstacle to the introduction of a rigid instrument. It was by urethroscopy, says the author, and especially by the observations of Oberlander, Neelson, and Finger, that the relations of the mucous glands of the urethra and the pockets and hollows partly connected with them have been made clear within the last few years.

Folds, pockets, and hollows of other sorts capable of hindering catheterism the author regards as very exceptional. He cites a case of Grunfeld's, in which there was an opening in the posterior wall of the urethra, situated about three inches from the external meatus, that led to a submucous passage an inch deep into which an instrument as large as that numbered fifteen on Charriere's scale could be inserted. He adds that a like instance has come under his own observation. On the lower wall of the urethra, in front of the bulb, there was a blind passage about half an inch deep, lined with urethral mucous membrane, and opening anteriorly, which ran parallel with the urethra and readily admitted a No. 23 catheter. He thinks that such diverticula are not to be looked upon as acquired, but as congenital.

In one instance Dr. Kollman has had the opportunity of observing a rudimentary pocket formation capable of constituting an impediment to catheterism, and of a kind that he has not found mentioned in endoscopic literature. This, too, he regards as a congenital formation corresponding in situation to the outlets of Cooper's glands, and the remark is made that in many dissections Henle saw the excretory ducts of these glands marked by little folds and pits. The author suggests that an examination with the urethroscope should not be begun at the bulb and carried forward toward the glans, but *vice versa*, to avoid overlooking certain pockets in consequence of closure of their entrances. He himself uses a special tube of his own contriving, the free end of which is bent obtusely so that injuries may be avoided.—*New York Polyclinic*, June 15, 1897.

A BRIEF CONSIDERATION OF SOME UNUSUAL TYPES OF FRACTURES AND DISLOCATIONS OF BONES LIABLE TO BE OVERLOOKED.

The following conclusions are reached by MANLEY (*Virginia Medical Semi-Monthly*, June 25, 1897) in a paper with the above title:

1. Fractures, difficult or impossible of demonstration—as those fissured vertically, or those non-displaced through the cancellous tissue of the articular ends of long bones—occur without doubt more frequently than is commonly supposed.

2. In injuries of the limbs attended with unusual or doubtful fracture, nothing can justify the application of violence to demonstrate its presence, as in no event are the principles of therapy altered in them.

3. In this class of cases the patient should be given the benefit of the doubt until, at least, time elucidates it—caution only being observed that the circulation is unhampered and full muscular relaxation is effected.

4. We should never fail to utilize the Roentgen rays as a diagnostic aid when possible, though their use in this direction is obviously limited.

5. Exploratory incision should be ruled out, unless the fracture is of such description as to demand or justify a simultaneous osteoplastic operation.

ON SOME SUPPURATIONS OF THE URINARY APPARATUS.

REGINALD HARRISON (*The Lancet*, June 26, 1897) in an admirable paper has selected for consideration some points which seem to arise out of the pathology of certain suppurative processes as observed in the urinary organs in relation to the more modern treatment of surgical lesions and infections as generally practised. He first illustrates his observations by taking the most common, as well as the farthest reaching, cause of suppurations of the urinary organs, occurring in the form of primary gonorrheal infections in the male and the female, and as secondary developments in other parts of the genito-urinary system, as more frequently observed in the latter sex. The advances that have been made in connection with the bacteriology of the urinary organs in reference to the kind and extent of these infections have already led to the most useful applications in the way of treatment. The investigations of Guyon, Janet, Halle, and others of the French school, more particularly as regards the life-history and cultivation of these micro-organisms, are of much interest and importance. The first point that strikes one is that many of the cases spoken of as instances of chronic suppurative urethritis or gleet represent a far more extensive invasion than is generally supposed to be the case. In this lies an explanation of the difficulty that is not infrequently experienced in bringing cases of this kind to a successful and speedy termination. Many gleets are merely reinfections of the urethra from the bladder, which serves the purpose of a medium for bacterial cultivation. So long as a gonorrhea is confined to the area of the urethra, as defined by that portion of the canal which lies in front of the compressor urethræ, or "cut-off" muscle, the task of successfully combating the infecting suppuration is not usually a difficult one. The disease is within limits which can be readily acted upon by various agencies, administered either locally or by internal medication, and its course is generally limited both in severity and duration. When, however, these boundaries are exceeded and the bladder becomes invaded, it is not easy to prevent reinfection taking place as if from an extraneous source. Hence the disease may be almost indefinitely protracted. Nor is invasion of the bladder in this way uncommon or necessarily indicated by acute symptoms such as would unmistakably draw attention to the occurrence. In most instances of this the prostate is the only part of the urinary apparatus that may show any active indication of contact with septic products, the mucous membrane of the bladder, though harboring them, being singularly insensitive to bacterial influences. That infection occurs in this way may be readily demonstrated. When the bladder has been thus involved the conditions of the urinary organs, particularly during the night, are extremely favorable for bacterial cultivations, a circumstance which may explain the constancy and degree of matutinal suppuration exuded by the urethra, which is a prominent symptom in this class of cases. It is rare, the author believes, for gonorrheal organisms to make their way up the ureters and to invade the kidneys—a fact which is no doubt due to the guarded manner in which these ducts enter the bladder, and the constancy of the downward flow of the urine. That renal infection and urethral inflammation sufficient to cause a pyelitis of the former and a contraction or stricture of the latter can occur has been demonstrated as possible. Some years ago he examined the body of a middle-aged man who died from acute single pyelitis rapidly following upon a first attack of gonorrhea. The ureter of the kidney involved was extremely dilated, a circumstance which was believed to be due to the fact that the patient for some years pre-

viously had been passing renal calculi. The opposite kidney was much congested. Mr. W. G. Nash has recorded a case of strictured ureter which was probably caused in this way. In the female the wide-spread effects of the gonorrheal infection are generally recognized.

The suspicion, however, that the bladder may be infected with micro-organisms should be made a matter of proof, and this can generally be done. For this purpose care should be taken to obtain a specimen of the urine as it exists in the bladder, minus any contaminations it may pick up in its transit along the urethra. The first portion of the urine passed should be rejected as probably containing the flushings of the canal, the balance being separately collected as representing the constituents of what may be called vesical urine. When it is possible a catheter specimen should be obtained, where there are reasons for believing that the bladder is infected. In this way gonococci may be detected in vesical urine in cases of gonorrhea. The mere fact that the urine is shown to contain bacteria does not necessarily imply that the individual is capable of inoculating another with gonorrhea. Where, however, the gonococcus is discovered in the urine or the discharges of the patient, as is not infrequently the case, the author does not think there can be any doubt as to the possibility of its communication to some one else. The bacteriological examination of these secretions may furnish important evidence in determining whether a person who has been comparatively recently infected should be allowed to marry. So long as these conveyers of infection can be detected in the urine or the discharges, so long may we expect that transference of the disease is liable to follow. In these cases of secondary infection of the bladder, caused by extension from the urethra, he has for some time placed much reliance upon the irrigation of the bladder and urethra with antiseptics, as described by Dr. Janet, with some modifications. The object is attained in the following manner:

The apparatus consists of an ordinary hydrostatic bladder-tank, holding about one pint of water, and fitted with a nozzle, to which a No. 8 Jacques' rubber catheter can be attached. The tank is elevated about six feet from the ground, and is filled with warm water containing thirty minims of Condy's fluid to a pint of the water. For lubricating the catheter he uses carbolized vaselin. The patient having emptied his bladder spontaneously is placed in the recumbent position, and the catheter is then passed. Before the nozzle of the irrigator is connected with the catheter as it lies in the bladder the fluid is allowed to run off for a few seconds so as to ensure that there is no free air in the tube of the apparatus. Then the connection is made and the fluid is allowed to flow into the bladder by degrees until the patient is conscious of feeling distention. He generally uses from twelve to sixteen ounces for this purpose, allowing it to enter the bladder in jets of about three or four ounces at a time. In this way the feeling of any sudden or extreme fulness is avoided, and the entire area of the mucous membrane of the bladder is unfolded and opened out, and thus comes in contact with the permanganate solution. When a sufficient degree of bladder distention is obtained the catheter is slowly removed, care being taken not to allow the fluid to escape. He then usually lightly palpates the bladder above the pubes with the hand before the patient stands up. This he should then do and proceed to empty his bladder of its contents by his natural efforts. Thus not only is the bladder washed out, but the whole urethra is flushed in a manner that is impossible by any artificial means. As the patient is voiding the contents of his bladder, it is well to direct him to suddenly interrupt the outflow once or twice by pressure with the finger on the penile urethra. In this way the lacunæ of the canal are also distended and flushed by the irrigating fluid. This completes the process, which may be repeated once or twice in the twenty-four hours, until the urine and the urethral mucus are found free from organisms. Most patients after proper instruction will be able to carry out all these details. On the conclusion of each irrigation the patient should rest for a time in the recumbent position. The author has only referred to the permanganate of potash in great dilution as the flushing agent for use in these cases. Half a drachm of Condy's solution, gradually increased to a drachm, in a pint of water, has given him good results. Neutral sulphate of quinine (one grain to the ounce) may also be used. More rarely he has employed nitrate of silver (one-sixteenth grain to the ounce) and perchloride of mercury. The last sometimes produces a great deal of pain, though only used in the proportion of 1 in 10,000. He has no doubt for aborting infections the perchloride is the most effective. When used for the latter purpose in the proportion of 1 in 10,000, and after the solution has

been spontaneously voided from the bladder as in the act of micturition, the bladder may be filled with a strained solution of albumen —say that yielded by one fresh egg—in a pint of tepid or nearly cold water. If this is done and the albuminoid solution voided in like manner from the bladder, any pain, smarting, or spasm that the perchloride solution produced at once ceases. Similarly, a weak solution of chloride of sodium, injected into the bladder after a solution of nitrate of silver has been used for this purpose, not only removes any irritation the latter may provoke, but coats over the inflamed mucous membrane with a thin layer of chloride of silver, which often affords much relief when cystitis is present. Probably there is no better bactericide than nitrate of silver in these cases, but it requires to be used with the precautions mentioned, when good results may be obtained. In this class of cases, where suppuration proceeds directly from infection, the internal administration of bactericides may be advantageously combined with the local treatment just referred to. In rendering the urine sterile and destructive to the life of the gonococcus there are no more effectual agencies than some of those which are derived from the vegetable kingdom. He refers particularly to the volatile oils which are so largely eliminated by the kidneys, such as sandalwood, copaiba, cubebs, and similar drugs. By these it is possible to so saturate the urine as to render the existence of certain forms of bacteria impossible.

The author then notices other varieties of urinary suppurations, which may be best illustrated by certain cases of prostatic obstruction. Though the urine is in these instances usually purulent and charged with bacteria, the latter are not infective in the same sense as those he has previously referred to in connection with a special form of urinary suppuration. On the other hand, it must be remembered that these micro-organisms are readily capable of transference from one individual to another through the medium of catheters and instruments of this kind, and thus they may be regarded as factors in the causation of extensive and far-reaching suppuration in these parts. The principles of treatment in this class of suppurations are the same as those he has already mentioned, subject to certain modifications which he proceeds to notice. Putting aside the consideration of the precise means which these cases often require for mechanically emptying the bladder and thus preventing decomposition of the urine taking place, the restoration of the secretion to its normal state will be mainly brought about by antiseptics in the manner indicated. The more or less atonic condition of the bladder in these obstructive cases seldom permits us to employ the process of autoirrigation as previously described, and we must therefore for this purpose avail ourselves of one or other of the methods usually practised.

As to the toilet of the bladder: (1) The disposition of the parts requiring ablution; (2) the mechanism employed; and (3) the composition of the cleansing fluid. Most of us will admit that we are disposed to draw our ideas relative to the process of washing out the bladder from the natural state of the parts such as we see in anatomical plates. If, however, we select for our guidance the majority of pathological specimens illustrating the obstructive diseases of these parts, we shall at once recognize the difficulties that beset us in our endeavor to wash out these, as we should do, for instance, in the case of a pint vessel. Take for example, the hypertrophied bladders, with their various saccules, pouches, and dependencies, which are met with in connection with advanced urethral stricture in younger adults and in persons of more advanced age who are the subjects of obstructive prostatic disease. In many of these the bladder is no more like the natural organ than the interior of a glass bowl resembles the section of a coarse bath sponge. The contents of the latter we could hardly ever hope to wash out effectually, though we may succeed in soaking them out. For washing out the bladder he almost invariably employs the hydrostatic tank; it has many advantages over syringes. When the bladder is much fasciculated it should be done in the recumbent position, with the object of opening out the mucous membrane as completely as possible without causing pain, so as to reach irregularities on the surface which otherwise would escape contact with the lotion. When the bladder is much pouched it is a good plan, after filling it and before removing the fluid, to cause the patient to agitate his body from side to side so as to bring any dependencies there may be within reach of the antiseptic. In various ways such as these the process of washing out the bladder may be rendered more searching. For washing out in ordinary cases of bacterial urine he usually prefers boracic acid or the boroglyceride. Condy's fluid and iodoform may also be similarly employed.

The sterilization of the urine by internal medicines is an important adjunct in the treatment of the class of cases which the author is now referring to. It is quite unnecessary to draw attention to the many obvious ways in which the urine may thus be altered. The specific gravity, the reaction, and the composition of this secretion may to a large extent be artificially influenced, and in these directions the course of suppurative diseases of the urine passages may be importantly and favorably acted upon. He has already referred to the sterilizing influence that certain oils and essences, such as sandalwood and copaiba, are capable of exercising in this way. No less marked is the effect that boracic acid taken internally is capable of effecting in controlling bacterial life in the urine. Probably no better proof of this exists than in the results observed in connection with operations on the urethra, such as the passing of catheters and in internal urethrotomy. The late Dr. Palmer, of Louisville, showed many years ago that by the use of boracic acid beforehand the development of urethral rigors and fever under these circumstances was rendered highly improbable, and this has since been amply proved to be the case. Similarly the use of quinine as a prophylactic against urine fever has been shown to be most efficacious; salol and other like drugs are also well recognized as urine sterilizers. Though boracic acid in doses of ten to fifteen grains three or four times in the day is probably one of the most reliable sterilizers, it so often disagrees and causes dyspepsia as to interfere greatly with its use for the purpose. Some years ago the author's attention was called to a preparation called boro-citrate of magnesia, which was described by Dr. Koehler, of Kosten, in Germany, as a solvent for uric acid calculi, and gravel. In the communication referred to it is stated that it is prepared by dissolving boracite, a natural borate of magnesia which is found in Stassfurt, in citric acid. Whether it is actually a solvent for uric acid he is not prepared to say. Whilst testing it for this purpose he found that it frequently had a remarkable effect in sterilizing and clearing up purulent urine and in favoring the expulsion of calculi and gravel by its flushing effects on the urine passages. For the latter purpose he has used it for the last ten years in conjunction with other means for preventing urine decomposition, with considerable effect. He is now in the habit of prescribing it in teaspoonful doses in half a tumber or so of either warm or cold water two or three times in the day. We have other means for sterilizing the urine by the mouth. No one method or drug is universally applicable. There is a combination of the salicylate of soda with the benzoate of soda which possesses this power in a marked degree. He has frequently found urine which has been rendered opaque by the presence of pus, and swarming with bacteria, rendered clear in the course of a few days after the use of this preparation. He usually prescribes fifteen grains of both of these salts to be taken together three times a day in an ounce of chloroform water. The hyposulphite of soda in half-drachm doses has also in some instances effected the same object.

The principle of urine sterilization may, however, be extended to other purulent or bacterial conditions of the urinary apparatus. He refers more particularly to some of these chronic suppurations resulting from the formation of abscesses in connection with the prostate and prostatic urethra, where the pus was originally discharged, sometimes against gravity, into the latter canal. These are often most difficult to heal, by reason of the absence of a free and depending opening. Yet, on the other hand, the opening of the perineum and the incising of the prostate to secure free drainage of the discharge is a proceeding that cannot always be undertaken without some degree of risk in elderly subjects. The thorough cleansing of these deep parts by the use of antiseptics in the form of autoirrigation will be found efficacious in many of these cases of chronic suppuration. In some instances of prostatic suppuration it is almost impossible to flush a sinus connected with this part so long as a catheter of any kind is retained in the bladder. On the other hand, this object may be readily effected by the spontaneous contraction of a bladder more or less distended with fluid. In the sinuses, for instance, arising out of tuberculous prostatitis, this method usually proves very effectual. Again, he has resorted to this way of flushing urinary fistulæ with some antiseptic fluid when the primary cause of them has been removed, as by gradual dilatation or after internal urethrotomy. Tortuous routes through the perineum may, by washing out through the medium of the bladder two or three times if necessary in the twenty-four hours, be thus healed.

A few months ago Harrison saw a middle-aged man with a tight stricture in the deep urethra, which only admitted a No. 4 bougie.

In addition there were two chronic perineal fistulæ—one opening in the left buttock and the other by the side of the scrotum—through which almost the whole of the urine was passed at the time of micturition. The patient's condition was an extremely distressing one, as it was impossible for him to pass urine with any degree of comfort except upon a water-closet. The author divided the stricture from within by Maisonneuve's urethrotome. A catheter was then tied in the bladder for forty-eight hours, and on its removal a No. 12 silk catheter *à boule* was introduced morning and evening. After washing out by means of this in the ordinary way the bladder was finally filled with about a pint of warm boracic lotion, which the patient was required to void naturally in the standing position on the catheter being withdrawn. The fluid escaped as in the ordinary act of micturition with this patient—namely, partly by the urethra and partly through the false routes. The proportion of the fluid coming through the urethra gradually increased, whilst that passing through the two fistulæ grew less daily, and in the course of ten days entirely ceased. This method of procedure he has found from repeated trials to contribute importantly in promoting the sound healing of these sinuses and the comfort and cleanliness of the patient.

IMMEDIATE SUTURE OF THE BLADDER AFTER SUPRAPUBIC CYSTOTOMY.

De Falaccos advocates immediate suture of the bladder after suprapubic cystotomy, and thinks it should be employed in almost every case, irrespective of the condition for which the operation was performed or the age of the patient, and refers to numerous successful cases. He prefers catgut for suture material and uses a catheter *à demeure*. He allows his patients to get up at the end of a fortnight as a rule.—*Boston Medical and Surgical Journal*, June 24, 1897.

ACTINOMYCOTIC TYPHLITIS AND APPENDICITIS.

Gangolphe and Duplant (*Revue de Chirurgie*, June 10, 1897) excellently summarize the knowledge of this subject. As to the symptomatology, the first manifestations of the disease are variable; sometimes a pericæcal or parietal tumor is the symptom common to appendicitis. The germ undoubtedly penetrates with a foreign body. The stagnation of the intestinal contents in the cæcum favors the localization of the parasite at this point. The intubation is probably long. Müller has reported a case in which the hand was affected showing that the disease had an incubation of two years. Prodromes of the affection are extremely vague—dull pain, localized tenderness, gastro intestinal disorders. The intestinal symptoms are characterized by pain in the right iliac fossa, either acute or dull, sudden or gradual in onset. There is usually marked diarrhea, with the passage of mucus or even dysenteric feces. This diarrhea is persistent, sometimes alternating with periods of constipation. There may be vomiting associated with it. At this period there are usually no physical signs—even tenderness may be absent. After a variable time there is the development of a tumor; the parasite having passed beyond the intestine invades the surrounding tissues without any regard for their anatomical relations. The infiltration is rapid and at first extremely hard; the mass is fixed, and on section the tissues creak. Involvement of the skin is always slow, and even though adherent it may not seem to be inflamed. Usually palpation does not cause pain. Infiltration extends rather toward the surface than toward the deeper parts. Inevitably there follows a softening, usually preceded by pain. The skin becomes violaceous in color. Softening takes place rapidly. The liquid discharged is at first clear, then becomes gray, and contains yellow grains. The walls of the abscess are thick and granular. Fistulæ always form, usually direct, with punctiform external orifices surrounded by a button of granulations. The pus from these fistulous tracts contains the yellow grains. The tumor may be softened in several parts at the same time or consecutively. In the fatal cases the patient rapidly becomes cachectic and there is obstinate constipation. The temperature is rarely high. There is neither lymphatic tumefaction nor ascites.

Regression of the lesions is rare. The progress of the affection is essentially slow. The duration ranges from one to four years, eighty per cent. of cases terminating fatally either by peritoneal or hepatic complications or progressive cachexia. Metastasis to the liver is common and is nearly always fatal. Actinomycosis may reach the posterior portion of the abdomen through the mesentery; this method of evolution is nearly always fatal.

There is a strong predisposition toward mixed infection. One case reported by the authors was attacked by erysipelas; the yellow grains entirely disappeared upon the subsidence of this disease, and the infiltration disappeared entirely. The disease is most common between the thirty-fifth and forty-fifth years, and in men. Infection seems to be frequently carried by cereals.

Diagnosis is extremely difficult in the early stages; indeed, it is impossible to differentiate this affection from ordinary appendicitis. Slow onset, moderate pain, marked and obstinate diarrhea, and slight constitutional symptoms may possibly suggest the nature of the disease. When a tumor is formed, absence of pain, intense induration, normal color of the skin, absence of local hyperthermia are suggestive.

Tubercular peritonitis is readily excluded, since it exhibits disseminated lesions, is associated with ascites, and does not infiltrate the external teguments. Fibromata of the abdominal walls are not accompanied by intestinal phenomena, are oval, oblique, from above downward and without inward, and nearly always painless. They are fixed by muscular contraction and mobile when the muscles are relaxed; usually found in women during the genital period; and the overlying skin is healthy. Sarcomata of the iliac bones ulcerate very slowly from a circumscribed tumor strongly adherent to the bone, and until they attain large size are not accompanied by intestinal phenomena.

When fistulization has taken place the presence of yellow grains in the discharge, the multiplicity of the tracts, their peculiar openings, and the conformation of the cavities into which these tracts open, make a positive diagnosis possible. Tuberculous typhlitis might be extremely difficult to distinguish from the actinomycotic infection. In the former invasion of the abdominal wall by the ulcer is extremely rare.

Gangolphe has reported eleven cases of inflammations of the abdominal walls due to malignant tumors of the large intestine. In addition to the peculiar character of these inflammations due to secondary microbic infection, it should be recalled that intestinal disorders and occlusion or constipation precede the appearance of the inflammatory phenomena, which are localized in the supraumbilical region.

During the period when diagnosis cannot be confirmed medical treatment is indicated. If actinomycosis is suspected, iodide of potassium should be given in doses of from eight to thirty grains. It may be happily associated with arsenic; moreover, the treatment common to mild cases of appendicitis is appropriate. When tumor is formed internal medication is still indicated, and the iodide may be advantageously associated with calomel. Operation should, however, be performed at once, and as far as possible all the infiltrated tissues should be removed. If extirpation is impossible free incision should be made into the indurated tissues. The fistulous tracts should be made to intercommunicate and should be washed out with a one-per-cent. solution of potassium iodide, ten quarts being employed at each dressing. A compress is then applied impregnated with this solution. Neither curetting nor excision of the fistulous tracts is of any service.

THE TREATMENT OF REBELLIOUS CYSTITIS IN WOMEN.

ESCAT (*Ann. des Mal. des Org. Génito-Urin.*, February, 1897, p. 132) states that when cystitis proves rebellious to instillations, injections, or washings, curettage through the urethra is indicated. This is extremely serviceable in suitable cases, but should not be employed when there is kidney disease or when the inflammation has penetrated deeply into the bladder-walls. If the inflammation has extended beyond the trigonum, suprapubic cystotomy followed by curettage is indicated. Seven cases of chronic cystitis were reported in which not only was the curette employed but portions which resisted this instrument were touched with the actual cautery. In three other patients suprapubic cystotomy was unavailing. Vaginal cystotomy was, however, followed by cure. In cases thus treated the vesico-vaginal fistula should be kept open for a long time. The following conclusions were appended to this paper:

When a cystitis is observed in which ordinary treatment is unavailing, a very careful examination should be made for disease of the pelvic organs. The urethra should also be subjected to thorough exploration, and the urine should be repeatedly analyzed to detect the presence of kidney disease. When the ordinary means of treatment have failed and it is quite certain that the kidneys are healthy, suprapubic section in indicated, followed by destruction of all of the diseased mucous membrane, and temporary drainage. When the kidneys are diseased or the general con-

dition of the patient is bad, vaginal cystotomy is indicated, with drainage continued for a long time.

RUPTURE OF THE BLADDER.

HÖGERSTEDT (*St. Petersburger Medicinische Wochenschrift*, 1896, No. 30; *Centralblatt für die Krankheiten der Harn- und Sex.-Org.*, bd. viii, h. 6, 1897) writes of those rare cases in which the symptoms of the wound of the bladder do not develop for several days after the injury. In his case the patient three days after a fall suddenly experienced, in endeavoring to urinate, agonizing cutting pain in the region of the bladder, and was unable to micturate. The catheter drew a pint of urine containing many red blood-corpuscles. After this the patient was absolutely unable to pass his urine spontaneously, and seven days from the development of the first bladder symptom the patient died of peritonitis. It is apparent that the rupture did not originally involve the peritoneal coat, but as a result of inflammation this structure was so weakened that it was unable to resist the increased pressure incident to the effort at urination. This case and others like it show the importance of examining the urine for blood immediately following traumatism, and if this be found in any considerable quantity, and it is evident from the history of the case that the bladder is probably wounded, the application of continuous catheterization for several days.

STUBENRATH (*Archiv für Klinische Chirurgie*, bd. li, heft 2) has conducted experimental investigations on the elasticity and strength of the bladder and upon the mechanism of rupture, founding this latter study upon a statistical collection of cases in which either operation or autopsy demonstrated the seat or the nature of the lesion. His conclusions are as follows: Isolated traumatic rupture of the bladder can occur only when considerable violence is exerted directly upon this organ, when the organ is at least partly filled with urine. Rupture of the bladder usually occurs as a result of overdistention of the organ. Only exceptionally is it noted in the fixed portions as the result of direct violence. The violence always occurs in the weakest portions, but it is noteworthy that the weakest part from an anatomical standpoint is not necessarily so mechanically. The posterior upper portion of the viscus is usually the seat of tear in seventy out of 154 cases. The cause of rupture in this part of the organ can be attributed neither to pressure from the promontory nor to the longitudinal direction of the muscular fibers of the posterior wall. Comparatively large spaces between the muscular fibers in this region, and lack of support, seem to be the main causes of rupture in this locality. Ruptures may be multiple. The direction of tear is dependent upon the course of the muscular fibers, not upon the form of violence. The rupture may be complete or incomplete. Experimentally incomplete ruptures are commonly due to force working slowly. These incomplete ruptures prove that the tear is from within outward. At first the mucous membrane gives way, then the muscular coat, and finally the peritoneum.

INTRAPERITONEAL RUPTURE OF THE BLADDER.

WALTER (*Vratch*, 1896, No. 46; *Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, bd. viii, h. 6, 1897) states that in the Obuchow Hospital nine cases of intraperitoneal traumatic rupture of the bladder were treated. Eight of these were operated on, seven died in from two to seven days of peritonitis, and two recovered. One case, aged forty-four, was operated on fourteen hours after the fall. A tear two inches long was found in the posterior wall of the bladder. It was closed by the Lembert-Czerny suture. Perineal urethrotomy was then performed, and the bladder was drained for fourteen days. This patient recovered.

The second successful case was a man forty-eight years old, who was operated on thirty hours after injury. The lesions were found in the posterior wall; there was a tear two and a half inches long through all the coats, five inches long through the serosa. The borders of this tear were freshened, and the wound was closed by two layers of suture. Continuous catheterization was employed for three days. The abdominal wound was not completely closed, tampons being placed in the pelvis. After five days this tampon was found soaked with urine. A fistula formed, which, however, thoroughly closed.

ACTION OF CHLOROFORM OR ETHER UPON THE KIDNEY.

LEGRAIN (*Ann. des Mal. des Org. Génito-Urin.*, No. 2, p. 191, 1897) examined the urine of fifty-four people after chloroform anesthesia, and of forty-one cases after ether anesthetization. Narcosis in the chloroform

cases lasted on an average fifty-seven minutes, and in the ether cases one and a half hours. There were ten cases of albuminuria and cylindruria after chloroform; fifteen cases after ether. In three of this last series there was preexisting kidney disease. Autopsy was made in two of the ether cases, and profuse hemorrhagic nephritis affecting especially the glomeruli was found. Experimental investigation upon animals gave similar results. Especially characteristic of ether were the strong congestion and multiple hemorrhages in the parenchmya of the kidneys. After chloroform the animals experimented upon did not show glomeruli nephritis with fatty degeneration, or necrosis of the epithelium of the tubules and the extravasations of leucocytes about the glomeruli and into the parenchyma.

The author concludes that albumen is more frequently observed in the urine after ether than after chloroform, but that the nephritis caused by ether is transitory, whilst that due to chloroform is likely to become chronic.

LIGATURE OF CAROTID ARTERIES FOR THE CONTROL OF HEMORRHAGE DUE TO PHARYNGEAL ABSCESS.

At a recent meeting of the Royal Medical and Chirurgical Society CLUTTON (*British Medical Journal*, May 29, 1897, p. 1349) reported the case of a victualer, twenty-eight years old, with a history of having bled rather profusely the day before from an abscess in the pharynx above the right tonsil. After the lapse of a few days the soft palate was divided for the purpose of a complete examination of the abscess. A hole was found passing through the wall of the pharynx into the tissues of the neck. This opening was enlarged and the cavity plugged with cyanide gauze, as it was thought from the character of the hemorrhage that the bleeding might be from the internal jugular vein. During the night following this operation the man bled so furiously that no doubt could be entertained as to the hemorrhage being from a large artery, probably the internal carotid. On the following day the bifurcation of the common carotid on the right side was exposed and an animal ligature applied by means of a stay-knot to the common carotid and its two branches. A saline infusion of two pints was given whilst the wound was being closed with sutures. The wound in the neck healed by first intention, and the abscess cavity in the pharynx was found by digital examination some time later to have closed. There was no further hemorrhage after ligature of the carotid arteries. — *Journal of the American Medical Association*, July 10, 1897.

SUCCESSFUL REMOVAL OF BRAIN TUMOR, WITH PERMANENT RECOVERY.

ZIEHL and ROTH (*Deutsche Medicinische Wochenschrift*, May 6, 1897, p. 297) have reported the case of a man, sixty years old, who, in the midst of perfect health, was suddenly seized with a peculiar rigidity of the thumb and index finger of the right hand, followed by loss of consciousness for several minutes, but without twitching or convulsion. With the return of consciousness vomiting took place. The gait was somewhat staggering, but there was no paralysis. On the following day the patient had returned to his usual health. Rather more than six weeks later the man was seized with transient tonic followed by clonic spasm of the right hand, without loss of consciousness. After another interval of about the same duration he was awakened at night by severe headache and found himself paralyzed on the right side. In the course of two weeks the palsy of the lower extremities had receded to such a degree that the man could walk, while that of the upper extremities subsided rather more slowly. From time to time, however, the right upper extremity was the seat of clonic spasm, always beginning in the thumb and index finger. At times the entire right side of the body was involved. These attacks were followed by headache, which was absent in the intervals. A small area of tenderness was detected in the right parietal region, which subsequently became edematous. No ophthalmoscopic changes were found. It was learned that the patient had had a chancre at the age of twenty-three years, but secondary symptoms had not been observed. Two or three years before coming under observation he had fallen and struck his head. The use of potassium iodide was unattended with relief, while mercurial inunctions were followed by amelioration of the headache following the attacks of loss of consciousness, although without effect upon the attacks themselves. Memory beginning to fail and the general condition to suffer, trephining was decided upon. Accordingly the motor area for the right thumb and index finger was exposed. The bone was found hard and dense and covered on its surface by

hyperostoses and osteophytes. The dura was covered with a brownish-red mass resembling granulation tissue, a portion of which was adherent to the overlying and eroded bone. The adventitious material was removed, together with the involved bone, and the wound was tamponed and closed. Histologically the material was found to be constituted of round cells. The surgical progress of the case was uncomplicated, but the convulsive attacks recurred, and finally the condition of the patient became so aggravated that a second operation was undertaken at the site of the first, the dura being now opened and a collection of material similar to that found originally removed. This, on microscopic examination, proved to be an angiosarcoma. The operation was followed by right hemiplegia and paraphasia, and impaired sensibility in the right arm. Later, however, progressive improvement set in, with almost complete restoration of function, and this condition was still present more than two years after the second operation.—*Journal of the American Medical Association*, July 10, 1897.

AN EASY AND RAPID METHOD OF FIXING THE URETERS IN THE INTESTINES WITHOUT SUTURES BY THE AID OF A SPECIAL BUTTON; WITH EXPERIMENTAL RESEARCHES.

In a paper contributed by ACHILLE BOARI to the *Columbus Medical Journal* of July 6, 1897, the writer describes a button which consists of a collar-button with quadrilateral base, which he has devised for the above purpose, and details a number of experiments which gave the following results:

1. The button was expelled the tenth or twelfth day. Fearing, therefore, that the cicatrization would not be complete in so short a time, the author has modified the head of the button, making it less cutting and rounder, in order that the ureter may be longer in effecting its separation.

2. The extraperitoneal route recommended by Chaput and which they followed is very convenient for the grafting of the left ureter upon the descending colon. The operative lesion is not very severe, but the technique of the grafting with the forceps seems clumsy. For this reason the author has tried to simplify it.

3. The first discharge from the rectum occurred in one case in fifteen hours, in the other twenty-four hours, after the operation, and was of small quantity (25–30 cubic centimeters); while the others succeeded them with an interval of two to four hours, and a mean quantity of 100 cubic centimeters. This causes him to think that the bilateral graft at a single operation is dangerous, because in these cases during the first fifteen to twenty-four hours the organism will probably be exposed to dangers from uremia, either from suppression of urinary secretion or prolonged stagnation thereof.

The graft is made upon the rectum or the colon by proceeding in the sacral way. Although the experiment guarantees the success of the operation, nevertheless, when the operation is upon the human subject it is better to make the graft outside the peritoneum, because should it happen to fail then the patient will not perish from peritonitis. At the worst, a urinary fistula will remain, which can be repaired later. By whatever way we proceed, we choose a button adapted to the caliber of the ureter, which is dilatable, invaginate the end of the ureter upon the tube and then fasten it with fine silk, lower the small movable plate until it joins perfectly the inferior one, and then according to the last modification the central portion of the tube has a transverse opening; pass into this opening a steel stylet of proper caliber, which is used to control the button and at the same time compress the cock, thus replacing the forceps. With a needle well mounted with fine silk circumscribe the point of the intestine into which the graft should enter with an oval line of purse-string suture. In this part thus circumscribed, which ought to be neither too large nor too small, make a long longitudinal incision sufficient to allow a large part of the button to pass with a little resistance. This done, locate the button in the intestinal incision with the aid of the stylet transversely to the line of the incision. The operator ties the end of the silk in a surgical knot and tightens it. The whole line of the suture is narrowed into folds and is applied to the central tube of the button.

In this situation the operator, making traction upon the thread, directs the assistant to withdraw the stylet, then the lock is depressed and the button closed. It only remains to make a second knot and the graft is made complete.

Boari compares this maneuver to that commonly made in definitive hemostasis, where one closes an artery by a knot with the aid of forceps. It no longer bleeds, and the operator adds a second knot to hold the first and compress the tissues still more; while by the

first method, which he described in the *Policlinico*, vol. 11, C., fasc. 10, 1897, in using the forceps it was necessary to make a suture at separate points, and the use of the forceps was inconvenient. By the last procedure, on the contrary, the operation is done with the greatest facility and rapidity, since it is done in a few minutes. Besides, the intestinal button-hole is with the aid of the stylet applied closely at all points to the metallic tube, so that the retraction of this portion, be it ever so small, from the intestine is impossible, and there is no reason to fear that it will yield.

After having made the graft upon a cadaver, the author tied the end of the intestine and filled it with water, and the water did not escape except by the ureter; even when the latter was compressed by one knot the suture did not allow the water to escape.

The groove which after the first modification he placed in the superior movable plate has great importance: (1) It responds, as experiments have shown him very well, to better closure next to the internal border of the intestinal button-hole; (2) it gives the ureter a larger surface for lateral adhesion, since it surrounds the intestine above the point where it should necrose.

The pressure of the threads upon the borders, which they cause to mortify, causes the button to fall, and when the button escapes through the anus it ought to bear, attached to the stock, the lace of silk which sewed the ureter as well as that which sewed the intestine. This demonstrates that the grafting has fully succeeded. If after the operation has been completed there remains a doubt, we may back up a little zone of intestine upon the ureter by the aid of sero-serous sutures.

In the author's last experiments he has tried to preserve the tissues up to the sphincter either by infixing with the aid of the button (large) the trigone and the openings of both ureters, or by fixing the ureter of one side and leaving around it a little collar of vesico-mucous membrane, which can be fastened above one of his buttons, and fixing it by the aid of a circular lace; but this cannot be done always.

In the large ulcerations of the ureter, in malignant tumors occupying the trigone it is necessary to make the infixation of that portion of the ureter which is sound. This is why he has recourse to artifices which may act as a valve. He has fixed the ureters upon the lower portion of the small intestine eight or ten centimeters above the cæcal valve, and he has sewed the superior portion of the small intestine by a lateral anastomosis upon the large intestine at a point beyond the valve in such a way that it could be called to defend the kidneys in hindering the regurgitation of the intestinal contents toward the ureter.

If, notwithstanding this artifice, experience should show an excessive frequency of renal infection, with the view of rendering the operation more worthy of being advised, there yet remains to us one precious recourse —the proposition of Giordano to make fixation of the ureters in the rectum and abolish the natural function of the rectum by an iliac anus. This is a half-measure which leaves a deformity, which is, however, more tolerable and less dangerous than that which comes from a double uretero-cutaneous fistula, and which at the outset has the advantage of prolonging the life of unfortunates who are affected with cancer of the bladder. We may yet dream of the creation of an artificial bladder by grafting the ureter upon a portion of resected intestine still nourished by its portion of mesentery; in reestablishing the continuity of the tube by means of anastomosis of both ends, and causing the loop thus isolated to discharge into the urethra as Poggi and Tizonni have proposed, or rather discharge its contents into some point of the colon as Chaput has said. Although those proceedings have not given complete results even to their inventors, nevertheless they contain in themselves, especially the first, the elements of so grand a conception that there is reason to think, if one should modify the experiments, the latter would end in happy results. However, there is always a necessity of having present in the mind beforehand these methods of difficult and grave intervention. It is necessary in the beginning to establish definitely the results of the bilateral graft of the ureters upon the intestines. There would be no recourse to the creation of an intestinal bladder except in case it should be demonstrated that grafting into the rectum, or into the colon, caused with it an infection of the kidneys, or else gave rise to too frequent discharges, which have not been demonstrated.

Even if it should result from experience that the orifices of the ureters with the lapse of time should become stenotic, we shall not yet confess ourselves to be vanquished. The author has thought of a lateral anastomosis of the ureters to the intestine, which would have the advantage of a larger opening to prevent the strictures.

ANESTHESIA STATISTICS.

According to the Berlin correspondent of the *Medical Press and Circular* of June 30, 1897, GURLT presented the following statistics at the recent Surgical Congress at Göttingen:

For the years 1895–6, 1896–7: For the first year there were forty-four reports, comprising 29,596 cases; for the second forty-six reports, comprising 29,173 cases. The report therefore comprised 58,769 cases. There were 27,025 cases of chloroform anesthesia, with 29 deaths; 19,875 cases of ether narcosis, with 3 deaths; 4,927 cases with Billroth's mixture (chloroform, alcohol, and ether), 996 with bromide of ethyl, 5,890 with cloroform ether—with one death for the whole. The inquiry had been carried out since 1891, and the grand results for the period were 397,593 cases, with 134 deaths—one in 2444. From chloroform the deaths were one in 2,039 cases; from Billroth's mixture, one in 3,870; from ether, one in 5,000; from bromide of ethyl, one in 5,228; from chloroform-ether, one in 7,594; from pental, one in 213. The last named anesthetic did not appear at all in last year's report. The mortality varied a good deal in the different years. Thus from chloroform the mortality for 1897 was one in 1,126; in 1893, one in 4,200. In the first three reports there were no deaths from ether; in the later ones the mortality varied from one in 2,200 to one in 6,700. In the case of chloroform the relative number of deaths had increased during the last five years. As regarded chloroform, the fatalities were generally due to cardiac paralysis; as regarded ether, pneumonia was generally the fatal factor. More lately kidney affections were observed after chloroform anesthesia, and exanthemata after ether narcosis.

GONORRHEAL CYSTITIS IN WOMEN.

LINDHOLM (*Centralblatt für Gynäkologie*, No. 21, 1897) closely observed a girl of nineteen under treatment for gonorrhea which had distinctly involved the uterine mucous membrane. She began to complain of pain during micturition. On examining the urine gonococci were detected in pure culture. Through the cystoscope the vesical mucosa appeared very vascular, with superficial loss of substance at certain points. The cystitis was cured by washing out the bladder with warm boracic lotion and injection of a one-per-cent. solution of nitrate of silver.—*British Medical Journal*, July 3, 1897.

REMOTE EFFECTS OF BONE TRAUMA.

Under this title D. S. FAIRCHILD (*Journal of the American Medical Association*, July 10, 1897) contributes an interesting addition to our knowledge:

The practical propositions involved in this paper are based on inflammation or irritation in bone following injury and the sequelæ resulting therefrom.

1. Resolution, including a complete restoration of the bone to its normal condition, occurs in the vast majority of cases.

2. Resulting in rarefying osteitis, condensing osteitis, or a combined rarefying and condensing osteitis, which may remain as a more or less permanent condition; if slight in degree giving rise to no well marked subjective or objective signs after the process becomes arrested.

3. If the process continues for a period beyond a few months, well marked and unmistakable changes in the physical condition and appearance of the bone will become manifest.

4. A persistent acute or chronic osteomyelitis will also give rise to unmistakable physical changes in the bone.

5. A persistent chronic osteoperiostitis will give rise to thickening of both periosteum and bone of a character that will readily be recognized if the bone is so situated as to admit of easy surface examination.

6. If the products of inflammation in cases of rarefying osteitis or in osteomyelitis become infected with pus-forming microbes, the suppurative process will become plainly evident, except in cases in which the process is very limited, giving rise to a small abscess in the bone which may be indicated only by subjective symptoms.

7. The injury and irritation following may establish a *locus minoris resistentiæ* which may become the seat of tubercular infection with certain definite results. The length of time after a trauma during which this influence may exist cannot be definitely determined, but it may be assumed in the light of critical practical experience and pathological research that the special predisposition will cease to exist as soon as the effused blood is absorbed, and the protoplasmic elements—the products of irritation and inflammation—have been resolved into new bone or have undergone degeneration and absorption—*i.e.*, as soon as the normal nutrition balance is restored. The author does not believe there is any scientific evidence or any practical facts that will bear criticism which will support the assumption

that the *locus minoris resistentiæ* may continue for months or years after all signs of the injury and its immediate results have disappeared.

8. There is no evidence to show that a carcinoma or sarcoma may develop as the result of an injury after the immature bone elements have been transformed into tissue of a normal resisting physiologic type.

THE ROENTGEN RAYS IN OSTEOPLASTIC SURGERY.

OLLIER (*Bulletin de l'Académie de Médecine*, No. 20, 1897) points out that, thanks to the delineations obtained from the Roentgen rays, it is no longer compulsory to wait until the patient's death before the actual dimensions and the exact form of newly developed bone can be made out. The surgeon is now able to make an autopsy of such formations on the living subject, and to examine them beneath the soft parts almost as distinctly as if they were directly exposed. Two cases are recorded in which the extent and form of new bone deposited after free removal of necrosed tibia were clearly shown by large skiagraphs. In one of these cases a portion of tibia about eleven inches in length had been removed from the leg of a girl eight and a half years of age; and in the second the patient, who was eleven years of age, had lost about nine inches of the lower half of the same bone. The drawings, taken some time after complete recovery, show in each case the outlines of the regenerated bone, which is less regular in form than that of the sound limb, somewhat uneven on its surface, but distinctly thicker than the opposite tibia. A third case is reported in which the picture produced by the rays showed a very satisfactory development of new bone produced by a long series of transplantations of periosteal and osseous grafts, practised with the object of filling up a large gap (about 10½ inches) formed after the removal of a large sequestrum in the tibia. The first attempt failed in consequence of necrosis of the graft, which was a portion about six inches in length, of the tibia of the sound leg, and the gap was not completely filled up until after repeated transplantation of fragments of bone from sheep and rabbits, and resection of a portion of the shaft of the fibula. Notwithstanding the failure of the effort to transplant a large fragment from the sound to the defective tibia, Ollier strongly advocates in such cases the practise of direct osteoplasty. The transplanted fragment, however, must retain its periosteum, for if this membrane be wanting the operation will certainly prove sterile. The healthy tibia, it is stated, is a favorable source for preparing osteoplastic grafts, as this bone speedily repairs any loss of substance. The picture taken by the Roentgen rays in this case shows that the gap formed by the removal of the long piece of bone has been almost completely filled up. Fragments of healthy bone taken from a limb amputated for the results of recent injury form, it is asserted, excellent grafts. — *British Medical Journal*, July 3, 1897.

THE UMBILICAL CORD.

A. C. WENTZ (*Pennsylvania Medical Journal*, June, 1897), in an instructive and practical paper on this topic, says the methods of treatment of the cord are almost as numerous as the accoucheurs of the present day. They, however, are divided into the wet or greasy, and the dry or powder dressings. The wet dressings are lard, sweet oil, fresh unsalted butter, petrolatum, etc., in warm climates. The dry dressings are starch, iodoform, boric acid, salicylic acid, powdered acetanilid, bismuth, chalk, talcum, lycopodium, calomel, and others, used separately or one or several combined.

DOKTOR reports his experience relative to the treatment of the umbilicus in new-born infants, and the prevention of infection. In new-born infants the navel forms a columnar projection of the skin, on the top of which the cord is attached, a sharp line of demarcation, the navel-ring, separating the cord from the skin. On its margin are numerous vessels that go to the border of Wharton's gelatin, but do not enter it. When the cord is ligated its tissues lose their viability and must separate and fall away, leaving the wound covered with a living structure. This small wound is especially liable to infection and resultant maladies, light or severe: (1) Because of its condition; it is not merely a wound of the abdominal skin, but also of its walls, and in closest proximity to the peritoneum, which is very susceptible to infection. (2) The peculiarity that three great vessels lie free in this wound. (3) The disproportionately large mass of dead tissue, the remains of the cord. (4) The peculiar tendency to an excessive formation of granulations. (5) The frequency of development of anomalies and aberrations of the umbilicus also predisposes it to disease. Doktor suggests the prevention of

infection by cutting the cord as closely as possible and applying a careful antiseptic dressing, which should not be changed except for good cause. In preference to changing the dressing the bath should be omitted.

The following named physicians have kindly advised the author by letter of the treatment in the various institutions with which they are connected:

Dr. George M. Boyd, of Philadelphia Lying-in Charity: "Cord first stripped and pressure made from umbilicus toward placenta. Placenta knot made about three inches from umbilicus with bobbin; second knot placed one and a half inches from umbilicus; cord severed between knots. Should the cord be a thick one the second knot is not made. Stump held in fingers and before knot is placed the Jelly-Wharton exposed. In some cases to facilitate mummification a third knot is placed half an inch from umbilicus. The stump then has the two knots. The stump is then dusted with salicylic acid one part, starch five parts, wrapped in gauze, and binder applied. With this treatment we do not have suppuration, and the mass comes away usually in five days."

Dr. Charles P. Noble, of Kensington Hospital for Women: "The principles upon which the umbilical cord should be managed are: That it should be protected from infection on the part of the nurse by having her hands sterile when she handles it in the first cleansing or bath, and also subsequently; that it be dried after the first bath or cleansing, and then dressed in a dry, aseptic dressing. Sterile gauze is a very convenient dressing to wrap up the stump of the cord, over which is placed the belly-band. As a powder, bismuth subnitrate, with ten-per-cent. salicylic acid, or simple boric acid, is all that is used. In exceptional cases in which infection takes place and there is a discharge, the discharge is washed away with a peroxide of hydrogen solution, and the powder of salicylic acid and bismuth is applied. The cord usually comes away about the fifth day."

Dr. Barton Cooke Hirst, of the Maternity Department of the University of Pennsylvania, says he cuts the cord, holding it between the second and third fingers of his left hand and cutting with the point of the scissors turned toward the palm of that hand so that he cannot possibly do the child any injury. Before putting on the ligature he strips the cord of superfluous mucous tissue, pinching the vessels meanwhile to prevent hemorrhage. The nurse then holds the cord while he ties it firmly with an aseptic silk ligature. In dressing it he uses a pledget of salicylated cotton, put on the abdomen above the cord, on which he lays the stump, and over that another pledget of cotton which covers it entirely. This is held in place by the abdominal binder, and the cotton is changed every day when the child is washed, although any of it which clings to the cord firmly is not disturbed.

Dr. Howard A. Kelly writes the author the following as the treatment in use in the obstetrical wards of the Johns Hopkins Hospital: "Ligation one inch from umbilicus as soon as pulsation in the cord can no longer be felt, about eight inches from the child. For this purpose a double sterile ligature of heavy braided silk is used; the cord is then cut with a pair of sterile scissors between the ligatures. The child is given a full bath immediately after birth, and the cord is then dressed by wrapping it in a piece of sterile linen on which has been spread a little boric acid powder. The dressing is held in place by an ordinary abdominal binder. We make a point of keeping the cord perfectly dry until it drops off, and a dressing similar to the above is applied every morning. For this reason the child does not get another full bath until about the eighth or ninth day, but is simply thoroughly washed every morning by the nurse. They find the cord will drop off under the above treatment on about the eighth day."

With all these elegant aseptic treatments before us, what must be the lot of a poor country doctor, without sterile scissors, ligatures, linen gauze and cotton, hands, and nurse—sometimes only an "old granny" with her catnep tea to assist him. Yet these children do not all die—another evidence that Nature and pure country air are very helpful antagonists against septic poisons. The author's own experience for the last four years in the treatment of several hundred cases, with calomel in warm weather, and calomel 1 part and boric acid 7 parts by weight in cold weather, has been very successful. The method is as follows: After the ligation of the cord about one and a half and two and a half inches from the navel with boiled homespun linen thread, the cord is cut between the ligatures by scissors taken from strongly carbolized water. After the child is thoroughly washed and dried, the stump—especially the protruding vein and arteries at the end—the surrounding skin, even into the

groins, are well dusted with pure calomel. A clean old linen or muslin cloth about six by four inches, with a hole cut in the center, is thoroughly filled with calomel and placed on the abdomen. The stump is drawn through this hole. It is then laid toward the chest. The first fold of the cloth is made about one inch below the cord, also turned toward the chest; the second fold is made over this about one-third from right to left; the third fold is made about one-third from left to right. This entirely encases the stump in the calomel-cloth. The dressing is then held in place by the navel-band and safety-pins, pinned in front, for easy examination. The dressing is changed every morning after the child is washed and dried—great care being taken not to wet the stump at any time. By this method the cord, by desiccation, does not drop off until nine to sixteen days have elapsed. The umbilicus is thus thoroughly healed and usually shows no sign of red induration or pus in the fossa. After each bath the calomel, or calomel and boric acid, are applied for one or two weeks longer.

After long, unsatisfactory attempts in various methods, the author finally concluded that calomel, or calomel and boric acid, as above, are the best methods for general practitioners in towns and in the country, among the rich and poor, alike, for the reasons given above, and for the additional reason that calomel is a great antiseptic powder on the skin, keeping the entire surface free from urinous and fecal chafing; they are cheap, easily carried in the obstetrical bag, easily applied, and a teaspoonful is sufficient to supply a two weeks' course of dressing.

Reviews.

LECTURES ON PHARMACOLOGY FOR PRACTITIONERS AND STUDENTS. By Prof. C. Binz. Translated from the Second German Edition by Peter W. Latham, A.M., M.D. Volume II.
London: New Sydenham Society, 1897.

Over a year ago we reviewed with much praise and commendation the first volume of this interesting work by the well known German pharmacologist, Professor Binz, of Bonn. The second volume is quite equal to the first in its quality and quantity. It contains about 450 octavo pages, and chapters from 17 to 31, concluding with a valuable table of the maximum doses which may be administered to adults (which is taken from the German Pharmacopœia), an Index of Remedies, and a list of authors who have been referred to in the text. This volume consists in chapters upon Tannic Acid; the Vegetable Bitters and the Alkalies; the important Tonics and Alteratives, such as iron, phosphorus, and arsenic; the Mineral Astringents, as represented by bismuth, lead, and silver; and the Antisyphilitics, as represented by mercury and its preparations.

Succeeding chapters then deal with antiseptics, with quinine, with the recent antipyretics, with hydrocyanic acid, the inorganic and organic acids, emetics, purgatives and anthelmintics, oils and fats, irritants and caustics; and finally there is a chapter devoted to substances used for surgical and other purposes. This chapter, with a table of doses, index of remedies, and list of authors, already named, concludes the work.

Many pages are provided with copious bibliographies, which are limited, however, almost entirely to German literature. The book, as we pointed out in reviewing the first volume, is not a distinctly practical one upon therapeutics, and for that matter does not profess to be such. It is a brief summary of our pharmacological knowledge as Professor Binz finds it to-day.

We are sorry that in quoting from literature he has not consulted more authors outside of the German dominions. The volume as it stands to-day is a valuable and interesting one to the pharmacologist or the physician who is interested in the scientific side of therapeutics, but it is not one which the young physician will find particularly useful in the application of drugs to the treatment of disease. Naturally much attention is given by Professor Binz to the action of quinine upon the lower forms of life, and he takes pains to point out that many years before Laveran discovered the malarial organism he expressed a belief that the symptoms designated by the term "malarial fever" were produced by some form of bacteria.

EYE-STRAIN IN HEALTH AND DISEASE, WITH SPECIAL REFERENCE TO THE AMELIORATION OR CURE OF CHRONIC NERVOUS DERANGEMENTS WITHOUT THE AID OF DRUGS. By Ambrose L. Ranney, A.M., M.D. The F. A. Davis Co., Publishers, 1897.

The reviewer is somewhat embarrassed as to the nature of his sensations after the perusal of this book. If the frequently repeated and emphatic statements of the extraordinary and far-reaching effects of eye-strain, manifest or latent, real or artificial, can be accepted as the indubitable expression of the truth and the whole truth, the therapeutics of many

diseases, both those usually classified as nervous and those that are not admitted by most practitioners as belonging to that category, must be revolutionized. Adherence to other doctrines of causation and the practise of medicine according to laws founded on pathology and experimental investigation become not only out of date but positively wrong.

The book does not admit of detailed analysis. Its defects or its virtues, whichever they are, are too glaring and fundamental, standing out conspicuously from the first page to the last, to make it profitable to criticize an argument or a conclusion here and there. It must be altogether praised or absolutely condemned. If the inorganic diseases discussed are reflex in their origin and continued by a maintenance of the cause, and if that cause lies in a maladjustment of the ocular focus or a want of equilibrium of the ocular muscles, the teaching of this book, too clearly enunciated to be misunderstood, must be accepted as the only rational method of therapeutics; but if we admit that these so-called functional diseases may arise from other causes, such as vicious inheritance, acquired predisposition, irregular habits of living, intemperance, indiscretions of various kinds, probably attended with microscopic anatomical changes, we must conclude that the author's studies in this special line were inaugurated by a mind predisposed to accept partial truths, and that his further researches have been pursued with an enthusiasm that has perverted his judgment and closed his eyes to all adverse opinions.

Lest the reviewer should be considered unfair in his criticism or biased in his opinion, a few extracts from the book are submitted: "Many diseases which are to-day commonly regarded as of bacterial origin owe their development, in my opinion, to some *underlying cause that has impaired the nervous functions.*" "I have never yet encountered a case of typical phthisis in which eye-strain did not exist as a factor (more or less potent, in my opinion, in causing and hastening its development)." "The so-called 'inherited predisposition' to certain diseases is unquestionably based, in many cases, upon some anomaly of the visual apparatus." His views on chorea are thus expressed: "I would assert that clinical experience had demonstrated most positively a *direct causal relationship between eye-strain and chorea;*" on sleeplessness thus: "*Clinical evidence goes to show that a large proportion of subjects affected with persistent insomnia of long standing suffer from some congenital defect of the eyes themselves or from an improper adjustment of the muscles that move the eyes.*" He believes many chronic and intractable intestinal disturbances are dependent upon eye-strain. Of twenty-six published cases of epilepsy he says: "Four have abandoned treatment almost from its beginning and should not be counted. Of the remaining twenty-two cases ten, or forty-five per cent., may be counted as well (seven being completely cured and three being practically cured); amelioration of the attacks has been afforded by eye-treatment in nine cases, or nearly forty-two per cent.; and no improvement has been observed in three cases—about thirteen per cent." (Among the complete cures is a case of twenty-four years' standing.) A number of cases of nervous prostration and insanity are reported as cured by adjustment of glasses and tenotomy of the eye muscles.

Ranney's methods of diagnosis are interesting. He lays great stress on the phorometer of Stevens, and accords secondary importance to the Maddox rod and strong spherical glass, both of which are in our opinion superior to the diplopia test because they do not displace but deform the image, and do not refract it onto regions of the retina that do not include the fovea; and he has omitted to mention the cobalt glass test, which, in operable cases, is to be strongly recommended for accuracy and for the saving of time. If a patient shows orthophoria at the first examination Ranney is not discouraged, but by a perseverance that can only be commended finally elicits muscular imbalance of degree high enough to warrant graduated tenotomies, one after another, until the muscles are restored (?) to equilibrium and the patient is cured. From an ophthalmic standpoint we might criticize the method of operation. Nowhere is advancement recommended. The only procedure advocated is graduated tenotomy, whereas the practise of other equally credible surgeons—that is, strengthening the weak rather than weakening the strong muscles—is ignored. Again, he fails to discuss the *raison d'être* for the anomalies other than to mention their congenital origin, but believes the entire fault is to be found in a too active muscle rather than a too great nerve stimulation to that muscle, or too little to its antagonist, and submits the reports of cures, supported by numerous testimonials, of the most serious disturbances of the nervous system by

dividing a few fibers, more or less, of one or more muscles at their ocular attachments!

Enough has been submitted to allow the reader to form an idea of the scope of this work and to warn him against accepting the method here advocated of treating the nervous diseases known as chorea, intestinal derangements, epilepsy, nervous prostration, and insanity. We acknowledge that Dr. Ranney has written an interesting book, but we would advise students of ophthalmology and practitioners whose opinions as to the importance of the causal connection of refractive and muscular anomalies of the eye to nervous disease are unformed, or whose familiarity with the subject is limited, that the doctrines taught can be accepted only with great caution; in fact, they are dangerous, and until verified by others had better be avoided.

H. F. H.

SURGICAL HINTS: FOR THE SURGEON AND GENERAL PRACTITIONER. By Howard Lilienthal, M.D.
New York: International Journal of Surgery Co., 1897.

This little brochure of twenty-nine pages represents a number of serviceable cautions and suggestions founded on the writer's personal experiences in the practise of surgery. The hints are all valuable. Thus the advice is given not to operate for chronic tumor without having given antisyphilitic remedies for at least a week. Not to boil non-metallic sutures in soda solution commonly employed for the sterilization of instruments. Always to remove canary birds from a small room in which chloroform is to be administered. To pour vinegar upon the chloroform mask when the operation has been finished. Not to drive trocar and cannula through the skin, but make a small puncture through this structure. Always to open an abscess from without inward. To obliterate vacant spaces by suture. To avoid pinning dressings to the skin when the patient is under an anesthetic.

There is no attempt at consecutive teaching in these pages, and the entire work can be read in ten minutes. It is well worth the time spent upon it, since even the experienced surgeon will certainly find a number of valuable suggestions.

A TEXT-BOOK OF DISEASES OF WOMEN. By Charles B. Penrose, M.D., Ph.D. Illustrated.
Philadelphia: W. B. Saunders, 1897.

This book is forcible and direct. Its author has the faculty of making his meaning perfectly clear in very few words. He has expressed himself dogmatically throughout, and has kept in view with singular fidelity the purpose he had in publishing this work—*i.e.*, to provide a book for the medical student. The book is to be commended without reservation not only to the student but to the general practitioner who wishes to have the latest and best modes of treatment explained with absolute clearness.

TEXT-BOOK ON MENTAL DISEASES: FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By Theodore H. Kellogg, A.M., M.D. Illustrated.
New York: William Wood & Co., 1897.

This is a large volume of nearly 800 octavo pages, written by a medical man who has had wide experience in the management of the insane, chiefly in public and private asylums. It is dedicated to the editor of the *New York Medical Record*, Dr. George F. Shrady, in exceedingly complimentary terms.

The chapters deal with the history of insanity, the statistics, nosology, and etiology of insanity, the etiology, clinical progress and termination of mental diseases, and psychical and somatic symptomatology. The remaining chapters in Part I are devoted to the pathology of insanity, its diagnosis and prognosis, and the treatment of its various forms. In the second part of the book, which deals with special groups and typical forms of insanity, we have chapters upon insanity from organic arrests of development, the various constitutional neuropathic states and neuroses, and a study of the various states of depression, exaltation, mental weakness, and stupor. It may be gathered from this statement of the subjects which are dealt with by Dr. Kellogg that he has written an exhaustive work of considerable importance to neurologists, and particularly to physicians who see much of mental diseases.

DIE NEUEN ARZNEIDROGEN AUS DEM PFLANZENREICHE. Von Dr. Carl Hartwich.
Berlin: Julius Springer, 1897.

Dr. Hartwich is, as many students of pharmacognosy are aware, the professor of this branch of pharmaceutical learning in the University of Zurich, and he has brought to the compilation of this book not only the result of much study, but in addition carefully arranged information from other workers in similar lines. Unlike many Continental authors he has not been content with a bibliographical search limited to German literature, but has culled his facts from every available source. With the object of making the work complete he has called to his aid the large manufacturing pharmacists of the world—such firms for example as Christy & Co. of London, and Parke, Davis & Co. of

Detroit and London—and he gives these sources of information full credit for the advantages offered him.

The arrangement of the volume closely resembles that usually followed in books upon medicinal plants. Each drug of great or little prominence is discussed in its alphabetical order, its derivation, varieties, and synonyms are given, and any peculiarities emphasized. Following this part is an addendum discussing matters not included in the main body of the text, and then there follows a most copious bibliographical index, which is perhaps the most useful part of the work. The next section is devoted to a botanical arrangement of the drugs considered; and finally we find an unusually complete index covering many pages. The volume is not intended for the practitioner of medicine, but will find a place in the library of every thorough student of materia medica or pharmacognosy.

Correspondence.

LONDON LETTER.

By Raymond Crawfurd, M.A. Oxon., M.D., M.R.C.P. Lond.

With the approach of August therapeutics as a rule fade into obscurity and oblivion and remain outcast in the professional wilderness until the holidays are over. This week, however, is an exception to the annual custom, and is notable for a communication of first importance by Mr. Malcolm Morris and Dr. Whitfield of London on the use of Koch's tuberculin in cases of lupus vulgaris. The authors do not claim to bring forward more than some preliminary observations, which besides their intrinsic interest to the profession may also have the good effect of stimulating others to follow their lead. It is matter for congratulation that some one has been found who has not allowed the great expense of the material, nor the difficulty in obtaining a supply adequate either in quantity or quality, to stand in the way of a prompt investigation of its usefulness. As yet it is early to speak of cure, though the results obtained in the initial series of six cases are certainly of the most encouraging nature. Mr. Morris wisely declines to chant the pæan until he has made more extensive and prolonged observations, and until sufficient time has elapsed to assure him of the permanency of the good results that he is able to chronicle up to date. One great merit of the new tuberculin is the very slight constitutional reaction to injections of ordinary size, and while larger doses do undoubtedly cause considerable constitutional disturbance, the reaction is of a comparatively transient character. This in itself may be regarded as a great advance on the old tuberculin. The results obtained by the authors have been summarized by them in their order of occurrence as: (1) a diminution of the surrounding halo of redness in those cases in which this had been present to a marked degree before the commencement of the treatment—in cases in which there were simply yellowish-brown nodules in a white scar, the injections produced no visible effect at this stage; (2) the next change noticed was a slight depression in the center of the nodules, leading to wrinkling, and later to desquamation of the cuticle; (3) steady healing of all ulcerated surfaces; and (4) slow subsidence of the previously permanent edema of the lips, ears, etc.—in some cases distinct shrinking and even complete disappearance of the nodules was observed. Lastly, in no single case even of the most obstinate kind was the slightest tendency to progress exhibited during the course of the treatment.

Of theories of chlorosis there is no end, and the latest addition to their number, by Lloyd Jones, Research Scholar of the British Medical Association, has at any rate the merit of originality. The term has been so loosely used to cover so many different conditions that, in the absence of any precise definition of what is denoted by the term, it is difficult to take issue with the theory. We certainly agree with the propagator of the new theory that the blood changes in cases clinically grouped as chlorosis do not consist wholly or even principally in diminution of hemoglobin, but that there is a general impoverishment, real or relative, of both hemoglobin and corpuscles. The examination of healthy blood in a large number of cases served to show that in women from puberty to the menopause some degree of general impoverishment of the blood is normal and natural, and has no counterpart in healthy male blood. The condition is evidenced in a greatly diminished specific gravity, this varying rather with the amount of hemoglobin than of corpuscles. Chlorosis, then, is a morbid exaggeration of a natural tendency. It is suggested that this normal decline is in some way associated with the child-bearing function of the female, and represents an anticipatory storage of

nutritive material to meet the increased demands of pregnancy; this is consistent with the well recognized tendency to "fill out," as it is termed, in the years following puberty. The natural corollary of these facts is that chlorotics should tend to greater fertility than other women, and this is asserted statistically to be true. It is to be hoped that society journals will not get wind of these views, or we may yet live to see chlorosis the fashionable craze of a London season. In any case physicians may look forward confidently to extensive practise in determining the specific gravity of female blood. Still what Dr. Jones gives to the profession with one hand he takes away with the other, in his observation of the concurrence of light complexion with low specific gravity and high fertility, as this is a decision that requires no specialist opinion. Dr. Jones ingeniously meets the objection that chlorosis is not a condition exclusively confined to women by suggesting that the low specific gravity in women is due to increase of plasma, while the chlorotic condition occasionally found in the male is due to actual diminution of plasma, so that the blood becomes actually heavy, as he finds it to be. In his treatment of chlorosis Dr. Jones has nothing more original than iron to suggest. We sincerely hope that his further investigations will fail to establish, as he surmises, an autointoxication from the uterus or ovaries, as we have no wish to see oophorectomy or hysterectomy placed on a rational basis in the scientific treatment of chlorosis.

At a recent meeting of the Edinburgh Medico-Chirurgical Society an interesting paper was read on picric acid as a primary dressing for burns. We confess to a feeling of thankfulness that, however satisfactory the method may be, it had not come into use in our student days. We are assured, however, that the hands need suffer no staining, if smeared with vaselin before dabbling in picric acid, and if washed in alcohol afterwards. Certainly we cannot claim hitherto to have discovered any agent that fulfils the primary requirements of a suitable dressing for burns. The method described by Mr. Miles consists of a preliminary cleansing of the part with a weak carbolic lotion, followed by the application of surgical lint soaked in a saturated solution of picric acid (picric acid, 1½ drachms; absolute alcohol, 3 ounces; water to 40 ounces), with a covering of wool and a many-tailed bandage. He claims for this method that it is painless, but we observe that chloroform is administered during the dressing, which detracts somewhat from the anodyne virtues of picric acid; also that it is a most efficient antiseptic, so that there is but little discharge and no necessity for frequent change of dressings. Among other minor advantages he regards the astringent nature of picric acid as valuable in allaying inflammation, and in stimulating the growth of epithelium.

The Inebriates' Legislation Committee of the British Medical Association has during the past year been making strenuous efforts to procure improved means of dealing with habitual drunkards. The Government has been urged to invest properly constituted authorities with the power of compulsorily secluding such inebriates, so that they may be brought under some sort of curative régime, in place of running the gauntlet of the police courts. We are glad to see that the Government has expressed an intention of dealing with the matter in the course of this session, but we wish there were not the qualifying condition "if time permits." The committee recommended that such a bill should include: (1) The compulsory therapeutic detention of habitual drunkards after a judicial process, on sworn testimony, and with every possible safeguard for the liberty of the subject; (2) the establishment and management of special homes for inebriates for the poorest, for criminal and non-criminal inebriate offenders; (3) the inclusion of intoxication by any narcotic in the term "habitual drunkenness;" (4) the appearance of voluntary applicants for curative detention before one justice instead of two justices as at present, or before some authorized official; (5) magisterial discretion to award a term of curative restraint in a reformatory or hospital instead of a term of imprisonment in a jail. It is sincerely to be hoped that the Government may be able to enforce all these recommendations, so that the habitual drunkard may be placed into the category of insanity, to which he practically belongs. The existing system under which patients voluntarily place themselves within the control of a licensed Retreat has worked admirably, and has fully justified its compulsory extension to all inebriates. We fear that objections may be raised on the score of expense, which must of necessity be increased in substituting a six months' detention under curative treatment for the existing short period of incarceration.

We learn with no small satisfaction that the

interested agitators who sought to transform the British Medical Association into a gigantic machine for medical defense have failed of their purpose. We can scarcely conceive a more preposterous suggestion than that the articles of association, under which existing members enlisted, should be altered so as to precipitate the whole body of members into every petty squabble of each and every member. Nor have we any sympathy for the ingenious sophistry that would argue such a proceeding to be consistent with the interests and honor of the medical profession. It is, however, matter for regret that the margin of votes taken from the branches on the proposition was not of a more substantial character, as the agitation is only too likely to be renewed at an early date. There can, however, be little doubt that compliance would lead to the withdrawal of very many members from the Association—those who have no palate for trades-unionism in medicine.

There is an element of comedy in the attitude which the profession has adopted with regard to the cognate question of hospital reform. A month or more ago a representative meeting of leading metropolitan practitioners denounced the efforts of the Charity Organization Society to form a central hospital board for the general control of medical charities. The antagonism, however, was directed not so much against a central board as such, as against the effective representation of the Charity Organization Society on the board. Simultaneously the Medical Charities Committee of the British Medical Association, which is the mouthpiece of almost identically the same body of medical opinion, expresses especial satisfaction at the action of the Charity Organization Society. And as each meeting has in succession memorialized the Prince of Wales in furtherance of its own wishes, we should say that probably some doubt exists in the mind of His Royal Highness as to what the profession wants or thinks it wants. The comparative failure of the Prince of Wales Hospital Fund has done much to cool the ardor of the more enthusiastic reformers.

The third volume of Clifford Allbutt's "System of Medicine" has just come to hand. It deals with certain General Diseases of Obscure Causation, Diseases of Alimentation and Excretion, and Diseases of the Stomach, Peritoneum, and Bowels. At present we have not been able to investigate the new volume in more than a most cursory manner, but our first impression suggests that it is quite equal to its predecessors. An article that will certainly attract general attention is that by Rose Bradford on the General Pathology of Secretion, a subject on which he speaks preeminently *ex cathedra*. The article on Gout by Sir William Roberts possesses all the graphic and picturesque literary features that lend so much attractiveness to his writings, while that on Rickets, by Cheadle, is obviously from the pen of a master-hand. In unpleasant contrast to these are the altogether scanty and inadequate paragraphs on diseases of such special interest as osteomalacia, osteitis deformans, acromegaly, and hypertrophic pulmonary osteo-arthropathy, by Bowlby. In the chapters on diseases of the bowels will be found an exhaustive article by Treves on Perityphlitis, for which he discards the uncouth name "appendicitis," though fully recognizing the paramount part played by the appendix in the disorder.

Another excellent book, by Lauder Brunton, on the "Action of Medicines," has just been published. It represents in substance, if not in form, the series of lectures to students at St. Bartholomew's on Pharmacology and Therapeutics, and we congratulate them on the good fare provided for them. Throughout the entire volume we notice a judicious blending of fancy with fact, and that happy coalescence of matter with style which makes a work classical and of something more than ephemeral value.

The "invasion" of the medical profession by womenkind spreads apace. At a recent prize-giving ceremony at the Royal Free Hospital, to which is affiliated the London School of Medicine for Women, the Dean—Mrs. Garrett Anderson—announced that the new entries for the year amounted to sixty-two students, making the third largest entry of any metropolitan hospital. This rapid increase contrasts curiously with the notable decrease in the number of male students in the last few years, since the curriculum has been extended to five years. The existing laboratories are no longer sufficient to meet the requirements of this great influx of students, and extensive building is already in progress in anticipation of the October entry. The new buildings are designed on a scale that will compare favorably with any of the existing medical schools. The Conjoint Examination Board still decline to admit lady students to their examinations, but there are not wanting signs of yielding even in this quarter.